



**Exponent<sup>®</sup>**  
Engineering & Scientific Consulting

**Steven Zebich, S.E., P.E.**

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## Professional Profile

Mr. Zebich has over 40 years of experience in structural engineering. His specialties include structural analysis and design, construction technology, accident investigation, and failure analysis.

Much of his work focuses on building inspection, evaluation of cause and origin of building damage, building envelope performance, repair, and rehabilitation of buildings and structures, construction defect analysis, construction dispute, slip and fall investigations, building code analysis and worksite safety roles and responsibilities.

Mr. Zebich has designed and analyzed a myriad of different structures including single and multi-unit residences, commercial low and high rise buildings, heavy industrial structures used in the power, waste processing, steel, and manufacturing industries, as well as towers, bridges, foundations and prefabricated/pre-engineered buildings. He is experienced in the use of wood, reinforced concrete, structural steel, aluminum, glass, and fiberglass in construction.

In addition to his professional engineering licensure, Mr. Zebich was a Qualified OSHA Instructor for the construction industry. He is also a retired officer of the United States Air Force Reserve with over 25 years experience in airlift operations, including aviation meteorology, and visual and instrument flight procedures. Mr. Zebich was also an Air Force Emergency Preparedness Liaison Officer to FEMA Region V for seven years, and is experienced in Federal and State Emergency Management, and the National Incident Management System (NIMS).

## Academic Credentials & Professional Honors

M.S., Structural Engineering, Northwestern University, 1982

B.S., Structural Engineering, University of Illinois, Urbana-Champaign, 1979

## Licenses and Certifications

OSHA #3115 Fall Protection

OSHA #500 Trainer Course In Occupational Safety & Health Standards For Construction

United States Air Force Master Navigator and Instructor/Evaluator Navigator

## Prior Experience

Senior Director, Construction Technology Group, Packer Engineering, Inc., 1995-2006

Instructor/Evaluator Navigator, Tactics Officer, United States Air Force Reserve, 1994-1995

Senior Engineer, Impell Corporation, 1985-1994

Senior Engineer, Sargent & Lundy Engineers, 1980-1985

## Professional Affiliations

Structural Engineers Association of Illinois

American Institute of Steel Construction

American Concrete Institute

American Society of Civil Engineers

ASTM: participating member of Technical Committee C-15, Manufactured Masonry Units

Reserve Officer's Association

## Publications

Zebich S. Unnatural accumulation of ice: An engineer's perspective. Occupational Health and Safety 2004 Jan.

Zebich S. I slipped, ergo I fell, fact or fantasy. Occupational Health and Safety 2004 Jan.

Zebich S. Unnatural accumulations of ice: Junk science versus real science. Michigan Defense Quarterly; 2003 Jan.

Zebich S. Guidelines for forensic engineering practice. Technical Council on Forensic Engineering of the American Society of Civil Engineers, 2003 (contributing author).

## Project Experience

*Explosion Investigation*—Performed post-explosion event inspection of several key buildings. Inspections were needed to expedite equipment recovery operations and to identify building components that required demolition, shoring or repair.

*Slab Collapse Investigation*—Investigated the cause and origin of the collapse of a two-way reinforced concrete elevated slab. Conducted field observation of collapse site, coordinated with other consultants and contractors to document the scene, retrieve artifacts, and observe demolition activities. Performed parametric structural analyses of the collapse area under a variety of loading conditions to determine the mechanism of collapse.

*Risk Analysis*—Conducted a site survey and document review of a microbiological research facility under construction for the University of Chicago. Review consisted of determining the vulnerability of Bio-Safety Level 2 and 3 laboratories and animal storage areas for potential damage from tornado generated missile impact.

*Structural Design Peer Review of a Suspension Bridge*—Conducted a peer review of a 3-D space truss

device used to construct post-tensioned reinforced concrete suspension bridges. Peer review consisted of calculation review, computer model verification, and drawing review, and was performed in response to the collapse of a similar unit in Puerto Rico.

*Structural Design Peer Review of Suspension Bridge Falsework*—Conducted a peer review of a 3-D space truss device used to construct post-tensioned reinforced concrete suspension bridges. Peer review consisted of calculation review, computer model verification, and drawing review, and was performed in response to the collapse of a similar unit.

*Structural Inspection of a Uranium Processing Facility*—Investigated the primary structural system of a large industrial building affected by large vibratory equipment. Investigation focused on the impact of vibration, structural modifications to the lateral load resisting system and deterioration and/or physical damage to key components.

*Structural Evaluation of Salt Mine Material Handling Structures, multiple locations*—Investigated cause and origin of a storage silo structure collapse, and assessed its implications on the structural reliability of similar structures at other mining facilities.

*Cause & Origin Investigation of a Storage Structure Collapse, Kapuskasing, Ontario, Canada*—Conducted a site inspection and engineering analysis of a large fabric covered steel frame that collapsed during erection. Our evaluation included stability analysis of emergency shoring system.