

Richard L. Serbowicz, PE

Forensic Engineering Expertise

Structural Engineering (Analysis and Design)

Review appropriate documents including project plans and specifications as it relates to the building structure for purposes of failure analysis and extent of resulting damages. In addition, being a licensed professional engineer, replacement designs are provided upon request. Examples of past work include failure analysis of collapsed structures (concrete, steel, wood, masonry) and various building components (windows, doors, exterior appurtenances, piping, roofing, exterior and interior cladding) as well as damage assessment of building structures after a fire, explosion, vehicle impact, snow overload, tornado, and hurricane, including expert witness testimony related to the aforementioned items.

Origin and Cause

Determine the source and responsible party or element related to water entry into a building whether it be through the building envelope or caused within the building interior. Examples of past work include failure of roofing and wall cladding causing moisture entry, humidity and condensation related losses, and groundwater entry including expert witness testimony related to the aforementioned items.

Building Fenestration / Building Envelope

The building envelope is a building's first line of defense to moisture entry. Identifying the type of system (single versus multiple barrier) and how the various adjoining materials' water and air barriers connect is key to effective moisture management. Examples of past work include both destructive and non-destructive examination of window and door installations, exterior cladding and brick specification and installation and roofing materials and installation.

Building Pathology/Construction Defects

The building pathologist relies on an in-depth knowledge of building design, construction, use, and changes as well as assessing the environment of use and the materials and how these interrelate to systematically identify, investigate and diagnose defects in a building. Past work includes design and specification of repairs as an owner's representative and expert witness testimony related to the aforementioned items.

Inspection and Evaluation of Roofing Systems

This includes steep and low slopes roofs as well as various types of roofing materials including both common and unique roofing applications, including plaza decks. Past work involved offering opinions and repairs related to installation deficiencies and storm-related damages including for hail and wind.

Construction Accidents/Slip and Fall

Determination of circumstances resulting in an accident. In-depth knowledge of the construction contracting process and the building codes is often the deciding factor in determination of cause and responsibility. Examples of past work include collapse of structures while under construction involving personal injury, as well as shoring and scaffolding-related accidents.

Qualifications & Training

- Evidence Handling, NAFE Virtual Conference, August 2020
- Deposition and Court Testimony, NAFE Virtual Conference, August 2020
- Webinar – Structural Building Condition Surveys, ASCE, March 2020
- Webinar – Avoiding Ethical Pitfalls in Failure Investigations, ASCE, March 2019
- Webinar – Structural Design of Stairs and Rails, ASCE, February 2020
- Webinar – Shear Walls, APA, December 2019
- Forensic Forum Case Presentations, SEAIOI, May 2019
- Webinar – Construction Vibrations, ASCE, May 2019
- Webinar – Jet Grouting, ASCE, April 2019
- Webinar – Renovation of Concrete Slabs on Grade, ASCE, April 2019
- Webinar – Avoiding Problems in Specifying Metal Roofing, ASCE, March 2019
- Webinar – Frost Protected Shallow Foundations Design & Construction, ASCE, February 2019
- Webinar – Green Roof Design Guidelines, ASCE, January 2019
- Webinar – Tensile Membrane Structures, ASCE, August 2018
- Webinar – 2015 International Building Code, ASCE, February 2018
- Webinar – Lessons from Forensic Engineers when Ethics Ignored, NSPE, December 2017
- Webinar – Forensic Assessment of Water Vapor and Fungal Growth, IAQA, December 2017
- Webinar – Designing with NDDS for Wood Construction, ASCE, November 2016
- Webinar – Advanced Snow Loads, ASCE, October 2016
- Webinar - Engineering Ethics: Expert Witness Testimony and Litigation, NSPE, July 2016
- Webinar - Changes to Wind Load Provisions of ASCE 7-16, ASCE, May 2016
- Engineering Investigations of Hurricane Damage: Wind versus Water, American Society of Civil Engineers, February 2016
- Webinar - Designing for High Winds, NSPE, February 2015
- Webinar - Engineering Ethics: Technical Issues, NSPE, February 2015
- Part 2 - Masonry Wall Bracing, MIOSHA, February 2015
- Webinar - Engineering Ethics Conversation About Expert Witness and Engineering Review Issues, NSPE, July 2014
- Webinar - Evaluation Damage & Repairing MPC Wood Trusses, ASCE, April 2014
- Webinar - Connection Solutions for Wood Framed Structures, ASCE, February 2014
- Webinar - Investigation and Repair of Fire-Damaged Framing, ASCE, February 2014
- Roof Ventilation for Cathedrals, RCI, March 2013
- How to Survey a Slate Roof, RCI, March 2013
- The International Codes, RCI, March 2013
- Energy Performance of Reflective Membranes, RCI, March 2013
- Wind Uplift Resistance Evaluation of Commercial Roofs, RCI, March 2013
- Reducing Risk of Moisture Problems from Concrete Roof Decks, RCI, March 2013
- Non-Destructive Testing Methods, SEAMi, February 2013
- Water Entry Prevention and Moisture Control in Buildings, University of Wisconsin-Madison, March 2012
- Asbestos and Lead Awareness, MIOSHA, May 2010
- Certified Roof Inspector – Commercial, HAAG Engineering, December 2009
- Inspection and Evaluation of Residential Roofing, HAAG Engineering, September 2007
- Commercial Roofs Damage Assessment, HAAG Engineering, September 2007
- Siding Damage Assessment, HAAG Engineering, September 2007
- Wind Damage Assessment, HAAG Engineering, September 2007
- Designing with Masonry, Masonry Institute of Michigan, October 2005

- Masonry Design and Detailing, Structural Engineering Institute, May 2004
- Empirical Masonry Design, Masonry Institute of Michigan, April 1998

Education

Bachelor of Science in Civil/Structural Engineering (with honor)
Michigan Technological University, Houghton, MI
May 1981

Licenses & Certifications

PE - Professional Engineer
Licensed by the State of Michigan – Number 6201032104
Licensed by the State of Wisconsin – Number 36417-6
CBIE - Certified Building Inspection Engineer, *Certification held under continuing legacy maintenance by the National Academy of Building Inspection Engineers (NABIE)*
Engineering Certification Institute
Certified Roof Inspector– Commercial, Certified by HAAG Engineering (2009-2014)

Employment History

Senior Forensic Engineer
Nederveld, Inc.
2007 – Present
Site inspections of failures related to structural issues, workmanship quality and material function, or damages from catastrophic events. Establish/corroborate event sequences leading to casualty loss events. Act as lead for on-site multi-party inspections. Produce summary investigative reports documenting observations and conclusions as well as repair plans. Testify as expert witness in court of law.

Project Manager/Construction Engineer
Erhardt Construction Company, Ada, MI
2006 – 2007
Project management on multi-discipline construction projects including managing self-performed and subcontracted work, expediting materials and equipment, project administration and construction scheduling. Perform various construction engineering functions including the design of timber and steel shoring and formwork for reinforced concrete construction, temporary bulkheads, and the analysis of various structural elements for safe support and removal during construction related demolition work.

Lead Structural Engineer, Senior Associate and Project Manager
Century A&E Facilities Design, Grand Rapids, MI
2000 – 2006
Performed structural design, as well as budgeted new work, prepared proposals, and directed the efforts of other structural engineers and designers. Project Manager for both single-discipline and multi-discipline engineering projects. Performed structural analysis and design on numerous commercial, industrial and institutional projects including structural steel and reinforced concrete buildings, masonry and timber structures, floor and roof capacity calculations, hoisting systems, building and equipment foundations, equipment platforms and walkways, tanks and silo foundations, earth retaining structures, pipe and utility bridges, fall protection systems and failure investigations. Performed structural engineering and managed the multi-discipline design team effort on the Concourse B Addition Project at the Gerald R. Ford International Airport.

Structural Engineering Department Manager
Earth Tech, Grand Rapids, MI
1997 – 2000

Managed the efforts of a staff of up to seven structural engineers and designers. Responsible for structural design and coordination of structural engineering for all types of design/build and traditional design and construction projects in the Facilities Engineering Group. Responsible for budgeting new work, proposal preparation, structural engineering standards and overall department operation.

Senior Structural Project Engineer
1993 – 1997

Performed design and had involvement during construction on numerous projects, including chemical and pharmaceutical plant additions, containment structures and liners, pile supported structures, foundations, retaining walls, pipe bridges, elevated platforms and mezzanines, elevated storage tanks, heavy equipment supports, chemical waste treatment systems, municipal and industrial waste treatment plants, wood treating plants and various other industrial and institutional buildings. Project responsibilities included design, subcontracting work, acquisition of materials, expediting materials and equipment, project administration, construction scheduling and inspection.

Construction Engineer/Project Manager
Erhardt Construction Company, Ada, MI
1989 – 1993

Performed numerous construction engineering functions including the design of timber and steel shoring and formwork for reinforced concrete construction and the analysis of various structural elements for safe support and removal during critical demolition work. Headed the company's surveying and layout department and performed initial on-site building layout and provided control lines prior to and during construction of municipal, industrial, institutional and commercial construction projects. Project management on multi-discipline construction projects.

Civil/Structural Project Engineer
Prein and Newhof, P.C., Grand Rapids, MI
1984 – 1989

Performed design and preparation of plans and contract documents for numerous municipal, industrial, institutional and commercial projects. Performed on-site inspection and monitoring of numerous projects through all phases of construction from groundbreaking to final completion. Designed shoreline erosion protection utilizing steel sheet piling and rock revetment on the Great Lakes and other inland waters. Performed many field investigations and evaluations for casualty loss events involving deflections, settlements, failures, vehicle impacts and weather-related events. Performed analysis, made recommendations, and designed remedial repairs following casualty loss events.

Bechtel Power Corporation, Ann Arbor, MI
June 1981 – July 1984

Residential Structural Engineer at a Power Plant Project

March 1983 – July 1984

Monitored construction work on a large remedial foundation project. Reviewed contractor construction procedures and verified technical compliance with contract specifications, design drawings and standards. Reviewed field change requests and assisted construction personnel with structural related problems during all phases of construction.

Structural Engineer in the Civil/Structural Design Group

June 1981 – February 1983

Analyzed and designed various reinforced concrete, steel and timber structures on a major power plant project.

Professional Affiliations

Member: Michigan Society of Professional Engineers (MSPE)
 Member: Structural Engineers Association of Michigan (SEAM)
 Member: American Society of Civil Engineers (ASCE)

Expert Witness Experience

Courtroom Testimony

December 2010

Andrew Kokas vs Citizens Insurance Company

Expert Witness for Citizens Insurance Company

4th Judicial Circuit Court

Jackson County Michigan Circuit Court Case # 09-003887-CK

August 2010

Hastings Mutual Insurance Company vs Richard Arnold

Expert Witness for Hastings Mutual Insurance Company

Hillsdale County Michigan Circuit Court Case # 30 09-000507-CZ S

February 2009

Rick and Marci Gates vs Knapp Pools & Spas

Expert Witness for Rick and Marci Gates

Branch County Michigan District Court Case # 2008-0321-GC

Arbitration/Facilitation

August 2001

R.L. Adams Plastics, Inc. vs Rockford Construction Company et al.

Expert Witness for R.L. Adams Plastics. Inc.

October 2022 Kimberly A. Harper vs Farington Heights Condominium Association et al.

Expert Witness for def. Farington Heights Condominium Association

Ottawa County Circuit Court Case No. 2019-5929-CH

Depositions

July 2016

Murad Management, Inc. vs Hastings Mutual Insurance Company

Expert Witness for Defendant Hastings Mutual Insurance Company

Oakland County Circuit Court Case # 16-150935CB

May 2015

State Automobile Mutual Insurance Company vs Bearing Point Construction, Inc.
Expert Witness for State Automobile Mutual Insurance Company
Oakland County Circuit Court Case # 14-143289-CK

January 2011

Donald Hayati, et al. vs Zeigler Construction et al.
Expert Witness for plaintiffs, Donald Hayati, et al.
Court of Common Pleas, Fulton County, OH, Case 09CV000032

July 2010

Daniel Hildebrand & Susan Lesniak vs Auto-Owners Insurance Company Expert
Witness for Auto-Owners Insurance Company
Van Buren County, Michigan Circuit Court Case # 10-59181-CK

August 2003

C.J. Campbell, as Next Friend for Charity Bennet, a minor vs Earth Tech, Inc., VP
Buildings, Inc., M R Industrial Services, Inc., Davis Steel Fabricators D/B/A Scott Davis
Construction Corp and Universal Forest Products, Inc.
Expert Witness for Earth Tech, Inc. and Universal Forest Products, Inc.
18th Judicial District Court, Johnson County, Texas Case # C200000036

October 1990

Daniel L. & Robin Y. Cook vs. Robert J. Deppe Building & Development et al.
Expert Witness for Daniel L. & Robin Y. Cook
Kent County, Michigan Circuit Court

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