

OTTO C. GUEDELHOEFER, S.E., F.ASCE

Principal



+CONTACT

Raths, Raths & Johnson, Inc.
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Chuck Guedelhofer is a Licensed Structural Engineer and Principal at Raths, Raths & Johnson, Inc. An accomplished structural engineer with over 46 years of experience, he has specialized in structural engineering and forensics, field and laboratory testing, design and construction peer view, quality assurance programs, and litigation consulting.

During his 38-year career as a key leader of RRJ, he has directed hundreds of investigations for many high-profile collapses and structural failures, and complex investigations related to capacity, deterioration, and repair with multiple disputes involving a variety of complaints.

A significant portion of Mr. Guedelhofer's work has involved the evaluation and repair of distressed or aged structures. These projects have required designs of specialty forming and shoring systems and innovative repair solutions.

An expert witness, he has assisted owners, contractors, architects, engineers, insurance companies, governmental agencies, and attorneys providing legal strategy, litigation support, consultation on the use of experts, and deposition and trial testimony on numerous matters.

Previously, he served as Manager of Structural Engineering Services for a global forensic consulting firm for ten years. His projects involved investigations to determine failure causation or collapse, rehabilitation, or unique original design, and expert witness. He managed a variety of research, testing, design, and investigation projects, including major collapses and hundreds of building and bridge performance evaluations.

■ EDUCATION

Master of Science in Civil Engineering
 Oklahoma University

Bachelor of Science in Civil Engineering
 Purdue University

■ REGISTRATIONS

Licensed Structural Engineer in Illinois and Hawaii

Licensed Professional Engineer in Alaska, Colorado, Connecticut, Delaware, District of Columbia, Florida, Indiana, Kentucky, Maryland, Michigan, Minnesota, Mississippi, New Jersey, North Dakota, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Carolina, South Dakota, Texas, U. S. Virgin Islands, Virginia, West Virginia, and Wisconsin

Temporary Licensee of the Association of Professional Engineers & Geoscientists of Saskatchewan, Canada

National Council of Examiners for Engineering and Surveying (NCEES)

Structural Engineering Certification Board (SECB)

■ PROFESSIONAL AFFILIATIONS

American Concrete Institute (ACI)

American Institute of Steel Construction (AISC)

American Society of Civil Engineers (ASCE), Fellow,
 Forensic Engineering Division, FED Committee on
 Publications, Associate Editor

Illinois Society of Professional Engineers / National
 Society of Professional Engineers (ISPE / NSPE)

International Code Council (ICC)

Structural Engineers Association of Illinois (SEAOI)

Structural Engineering Institute (SEI)

■ AWARD

American Concrete Institute (ACI)
 50 Year Member of ACI Recognition, 2016



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■ PUBLICATIONS

- "Case Study: The Critical Role of Sealants in the Repair of a Fluid-Applied Roofing Membrane," *Durability of Building and Construction Sealants and Adhesives: 5th Volume*, W.J. Macicak, O.C. Guedelhoef, K.D. Magnuson, and D.M. VanDommelen, ASTM STP 1583, L. Carbarry and A.T. Wolf, Eds., ASTM International, West Conshohocken, PA 2015
- "Using an Alternative Method of Analysis to Evaluate Punching Shear Capacity in Existing Pre-Tensioned Shear Reinforced Concrete Floor Slabs," Proceedings of the 2015 Structures Congress, Portland, OR, R.W. Kritzler, B.T. Lammert, W.J. Macicak, and O.C. Guedelhoef, April 24, 2015
- "Repair and Completion of a Damaged Cooling Tower," ASCE Journal, submitted for publication, P.L. Gould and O.C. Guedelhoef, May 18, 1988
- "To Bond or Not to Bond," *ACI Concrete International*, O.C. Guedelhoef and A.T. Krauklis, August 1986
- Comments on "Spandrel Beam Behavior and Design," *PCI Journal*, A.T. Krauklis and O.C. Guedelhoef, V.G. Naidu, and C.H. Raths, September-October 1985
- "Evaluation of Performance by Full-Scale Testing," ASTM International Symposium on Full Scale Testing of Structures, Philadelphia, PA, April 2, 1979; ASTM STP 702, O.C. Guedelhoef and J. R. Janney, April 1980
- "Minicomputers in Full-Scale Structural Testing," *Journal of the Technical Councils of ASCE*, Vol. 105, No. TC1, pp.103-111, O.C. Guedelhoef and S.G. Pinjarkar, April 1979
- "Structural Design of Tall Concrete and Masonry Buildings," Chapter A38 - Model Analysis, Contributor March 1976

■ PRESENTATIONS

- "Securing the Site and Preserving the Evidence / Dealing With OSHA and Other Governmental Agencies" and "Analyzing Causation, Proposing a Fix, Economic Waste, Betterment and Related Issues," American Bar Association Litigation Section, Regional CLE Workshop: Handling a Construction Failures Case, O.C. Guedelhoef, Panelist, New York City, NY, September 15, 2017
- "Recognizing and Mitigating Risks Associated with Modern Building Façade Construction," Construction SuperConference, O.C. Guedelhoef, D.K. Johnson, A. Adams, III, and L. Goodman, Panelists, Las Vegas, NV, December 7, 2016
- "Securing the Site and Preserving the Evidence / Dealing with OSHA and Other Government Agencies," American Bar Association Litigation Section, Regional CLE Workshop: Handling a Construction Failures Case, O.C. Guedelhoef, Panelist, Philadelphia, PA, June 3, 2016
- "Analyzing Causation, Proposing a Fix, Economic Waste, Betterment and Related Damages Issues," American Bar Association Litigation Section, Regional CLE Workshop: Handling a Construction Failures Case, O.C. Guedelhoef, Panelist, Philadelphia, PA, June 3, 2016
- "When 1 Test Is Worth More Than 10 Expert Opinions," Construction SuperConference, O.C. Guedelhoef, B.T. Lammert, and Louis Cairo, San Diego, CA, December 7-9, 2015
- "Navigating Construction Failures," 2014 Construction SuperConference, Las Vegas, NV, Panelist, Dec. 2014
- "Construction Failures and Defects - Parking Garages," Mealey's Construction Litigation Conference, May 20, 2008



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■ PRESENTATIONS

- "Engineering Disasters - 9 Rosemont Collapse," History Channel, Modern Marvels, December 10, 2004
- "Current Trends in Failures of Civil Engineering Structures," ASM Materials Week '94, Seminar on Analysis of Civil Structural Failures, October 5, 1994
- "Management & Organization of Structural Failure Investigations," University of Wisconsin-Extension, Madison, WI, November 3 and 4, 1987
- "Typical Recurring Problems with Parking Structures," ASCE Structures Congress, Chicago, IL, September, 1985
- "Observations Made During the Repair of a Tornado-Damaged Cooling Tower," International Symposium on Natural-Draught Cooling Towers, University of Bochum, Bochum, West Germany, September 5-7, 1984
- "Methods for Strength Evaluation of Distressed Structures," ASCE Conference, St. Louis, MO, October 26-27, 1981
- "Project Management," Evaluation of Structural Failures, University of Wisconsin-Extension, Madison, WI, May 12, 1983
- "Repair of Cracks in Structural Concrete," American Concrete Institute Convention, Detroit, MI, O.C. Guedelhoef and R.J. Rioux, September 23, 1982
- "Stability Investigation Based on In Situ Geometry," ASME/ASCE Conference, Boulder, CO, P.L. Gould and O.C. Guedelhoef, June 22, 1981
- "Recurring Causes of Construction Failures," ASCE Conference, New York, NY, T.L. Rewerts, R.J. Kudder, and O.C. Guedelhoef, May 1981
- "Evaluation and Repair of Tornado-Damaged Cooling Tower," American Concrete Institute (ACI) Convention, O.C. Guedelhoef, P.L. Gould, and A.L. Parme, April, 1981
- "Evaluation of Performance by Full-Scale Testing," ASTM International Symposium on Full Scale Testing of Structures, Philadelphia, PA, O.C. Guedelhoef and J. R. Janney, April 2, 1979
- "Instrumentation & Techniques of Full-Scale Testing of Structures," American Concrete Institute (ACI) Convention, Washington, D.C., October 1979
- "Correlation of Load Testing With Design," O.C. Guedelhoef and C. H. Raths, May 17, 1979
- "Consequences & Reasons for Breakdown of Quality Assurance," ASCE Georgia Section Annual Meeting, Atlanta, GA, December 1, 1978
- "Full-Scale Testing of an Elevated Rapid-Transit Structure," ASCE Convention, Pittsburgh, PA, O.C. Guedelhoef, J.R. Janney, and D. Boggs, April 24-28, 1978
- "Practical Applications of Minicomputers in Full-Scale Structural Testing," ASCE National Convention, San Francisco, CA, O.C. Guedelhoef and S.G. Pinjarkar, October 17-21, 1977
- "Dynamic Response Method for Structural Evaluation," ASCE Convention, San Francisco, CA, O.C. Guedelhoef, J.R. Janney, and J.F. Wiss, October 17-21, 1977
- "Computer Applications in Full-Scale Structural Testing," ASCE Specialty Conference in Structural Engineering Practice, Montreal, Canada, O.C. Guedelhoef, R.J. Kudder, and S.G. Pinjarkar, October 6-7, 1977



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■ PRESENTATIONS

"Static Load Testing of Concrete Structures in Accord with U. S. Building Code," International Symposium on Testing In Situ of Concrete Structures, Budapest, Hungary, O.C. Guedelhoef, J.R. Janney, and J.M. Hanson, September 12-15, 1977

"The Use of Experimental Stress Analysis Techniques with Civil Engineering," Society for Experimental Stress Analysis, Indianapolis, IN, October 1974

"Benefits of Model Studies to the Design Process," ASCE Structural Meeting, Cincinnati, OH, O.C. Guedelhoef, A. Moreno, and J.R. Janney, April 1974

"Small-Scale Models of Buildings for the Study of Structural Behavior," Symposia/Engineering Study, April 1969