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CHAD R. FISCHER, PH.D., S.E., P.E.
PRINCIPAL, VICE PRESIDENT

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Dr. Fischer is a Principal with ESi, specializing in the investigation, evaluation, and repair of damaged and distressed structures. He is also well versed in the evaluation of construction projects and procedures. Dr. Fischer has conducted inspections and evaluations of all types of structures ranging from residential to high rise commercial buildings, to industrial facilities. In addition, he has designed the structural repairs for many of the damaged buildings he has evaluated. Dr. Fischer is also experienced in evaluations and assessments of transportation and bridge structures. He has led several research projects on the structural health monitoring and real time assessment of in-service bridges.

Dr. Fischer actively volunteers his time as an emergency responder and trains other engineers for emergency structural assessments following large scale disasters. Currently, he is a Structures Specialist with Illinois' Urban Search and Rescue Team (IL TF-1). He has conducted training seminars across the country for groups of structural engineers, architects, and building officials on how to evaluate and assess structures following disasters.

Areas of Specialization

Engineering Analysis
Construction Engineering
Failure Analysis
Damage Assessment
Structural Health Monitoring
Repair and Renovation Design
Building Envelope Assessment
Engineering Surveying

Education

Ph.D., Civil Engineering, University of Illinois at Chicago, 2011
M.S., Civil Engineering (Structural), University of Illinois at Urbana-Champaign, 2000
B.S., Civil Engineering (Structural/Construction Management), University of Illinois at Urbana-Champaign, 1999

Licensed Structural Engineer (S.E.)

State of Illinois License No. 081-006193

November 2024



Licensed Professional Engineer (P.E.)

State of Arizona	License No. 67471
State of California	License No. 88874
State of Florida	License No. 81913
State of Illinois	License No. 062-057501
State of Indiana	License No. PE10708865
State of Iowa	License No. P26677
State of Michigan	License No. 6201055349
State of Minnesota	License No. 56442
State of Mississippi	License No. PE-34169
State of Missouri	License No. PE-2021016072
State of Nebraska	License No. E-16473
State of Ohio	License No. PE.84814
State of Oregon	License No. 103343PE
Commonwealth of Pennsylvania	License No. PE075699
State of Rhode Island	License No. 13769
State of South Carolina	License No. 28727
State of Texas	License No. 128135
State of Wisconsin	License No. 38908

Professional Affiliations

American Society of Civil Engineers (ASCE)
National Council of Structural Engineers Association (NCSEA)
Structural Engineers Emergency Response (SEER) Committee
Structural Engineers Association of Illinois (SEAOI)
American Institute of Steel Construction (AISC)
International Society for Structural Health Monitoring of Intelligent Infrastructure (ISHMII)

Training and Certification

OSHA 30-hour Construction Safety Training
OSHA Suspended and Supported Scaffold Training
Powered Industrial Truck Operator Safety Training
Certified ATC 45 Trainer – Safety Evaluation of Buildings After Windstorms and Floods,
sponsored by Applied Technology Council and National Council of Structural Engineers
Associations
Safety Assessment Program Evaluator Trainer
for California Office of Emergency Services
Disaster Service Worker
for California Office of Emergency Services Safety Assessment Program
FEMA Urban Search and Rescue Structural Specialist Training
sponsored by Structural Engineers Association of New York
Standardized Emergency Management System
sponsored by California Office of Emergency Services
Emergency Building Assessment – Post-earthquake Safety Evaluation of Buildings, ATC-20
sponsored by Applied Technology Council
PADI Open Water SCUBA Certified
CertainTeed Master Craftsman™ Roofing Contractor

Honors/Awards

2019 UIC Engineering (University of Illinois at Chicago) - Outstanding Young Engineer Award

ASCE 2003 New Face of Civil Engineering

2002 ASCE New York State Council Outstanding Civil Engineering Achievement Award – “World Trade Center Disaster Site Recovery”

Positions Held

Engineering Systems, Inc., Aurora, Illinois

2001 - Present

Illinois Institute of Technology, Chicago, Illinois

Department of Civil and Architectural Engineering Adjunct Faculty – 2008

US Army Corps of Engineers, Champaign, Illinois

Research Assistant, 1999 – 2000

University of Illinois, Urbana, Illinois

Teaching Assistant, 1999 - 2000

Hellmuth, Obata, and Kassabaum, St. Louis, Missouri

Design Engineer, 1999

Korte Construction Company 1996-1997

Assistant Project Superintendent / Surveyor, 1996 -1997

Technical Publications

Wojnowski, D.A., and Fischer, C.R. “WilTel Technology Curtain Wall Framing Failure Investigation.” ASCE Forensic Engineering 2012: Gateway to a Safer Tomorrow, January 18, 2013.

Fischer, C. “Mechanism Methodology for Structural Health Monitoring of Arch Bridges”, University of Illinois at Chicago PhD Dissertation, 2011.

Talebinejad I., Fischer C. and Ansari F., “A Hybrid Approach for Safety Assessment of the Double Span Masonry Vaults of the Brooklyn Bridge”, *Journal of Civil Structural Health Monitoring*, Volume 1, June 2011.

Talebinejad I., Fischer C. and Ansari F., “Simplified Technique for Remote Monitoring of Deflection in Arch Structures”, *Journal of Experimental Techniques*, Journal of Experimental Techniques, Volume 37, Issue 1, June 2011.

Talebinejad I., Fischer C. and Ansari F., “Numerical Evaluation of Vibration Based Methods for Damage Assessment of Cable Stayed Bridges”, *Journal of Computer-Aided Civil and Infrastructure Engineering*, In Press, 26 (3), 2011.

Talebinejad I., Fischer C., Ansari F. and Yanev B. S., "Safety Assessment of Brooklyn Bridge Masonry Vaults Based on Real Time Monitoring and Laboratory Tests, 1st Middle East Conference on Smart Monitoring, Assessment and Rehabilitation of Civil Structures, Dubai, UAE, February 8-10, 2011.

Fischer C., Talebinejad I., Ansari F. and Yanev B.S., "Fiber Optic Monitoring of the Masonry Arch Approach Spans in the Brooklyn Bridge", NDE/NDT for Highways and Bridges: Structural Materials Technology (SMT) 2010, New York, USA, August 16-20, 2010.

Talebinejad I., Fischer C., Ansari F., Yanev B.S. "Structural Health Monitoring of the Masonry Arch Approach Spans in Brooklyn Bridge." Proceedings of the Transportation Research Board 89th Annual Meeting, Washington DC, USA, January 2010.

Talebinejad, I., Fischer, C., and Ansari, F. "Serially Multiplexed FBG Accelerometer for Structural Health Monitoring of Bridges." Smart Structures and Systems, Volume 5, Number 4, July 2009.

Talebinejad I., Fischer C. and Ansari F. "Low Frequency Fiber Optic Accelerometer for Civil Structural Health Monitoring." 16th SPIE Annual International Symposium on Smart Structures/NDE, San Diego, CA, March 9-12, 2009.

Talebinejad, I., Fischer, C., et. al. "Structural Health Monitoring of the Lingotto Cable-stayed Pedestrian Bridge with Optical Fiber Sensors." Proceedings of the Third International Conference on Structural Health Monitoring of Intelligent Infrastructure, Vancouver, British Columbia, Canada, November 13-16, 2007.

Zhang, G., Zhang, Z., and Fischer, C. "Structural Health Monitoring of a Long-span Cable-stayed Bridge." Journal of Intelligent Material Systems and Structures, Volume 18, August 2007.

Morin, C.R., and Fischer, C.R. "Kansas City Hyatt Hotel Skywalk Collapse." Journal of Failure Analysis and Prevention, Volume 6(2), April 2006.

Fischer, C.R., and Wojnowski, D.A. "Roof Failure Due to Snow: The Implications of Improperly Applying Code Provisions." Forensic Engineering - Diagnosing Failures and Solving Problems, Proceedings of the 3rd International Conference on Forensic Engineering, London, UK, November 10-11, 2005.

Morin, C.R., and Fischer, C.R. "Historical Failures: Kansas City Hyatt Hotel Skywalk Collapse." Proceedings of the 2005 Materials Science & Technology (MS&T) Conference and Exhibition, Pittsburgh, PA, September 26, 2005.

Kenner, M.T., Wilkinson, J.A., Fischer, C.R. "Effect of Boundary Conditions on the Modal Analysis of a Staircase." ABAQUS Users' Conference Proceedings, Boston, MA, May 2004.

Domel, Fischer, et. al. "SEERPlan Manual - Structural Engineers Emergency Response Plan." National Council of Structural Engineers Association, August 2003.

Wilcoski, J., Fischer, C., et. al. "Alternative Shear Panel Configurations for Light Wood Construction: Development, Seismic Performance, and Design Guidance." Engineering and Research Development Center, ERDC/CERL TR-02-12, April 2002.

Technical Presentations

- "Emergency Shoring and Building Stabilization: Loads and Strategies"
2024 ASCE Structural and GeoConfluence, St. Louis, MO, November 2024.
- "Lifting and Rigging"
Guest Lecturer for CAE 472 – Construction Site Operation
Illinois Institute of Technology, Armour College of Engineering, Department of Civil, Architectural & Environmental Engineering, April 2024.
- "Environmental Forces and Construction Defects"
The Missouri Bar Fall Committee Meetings, Construction Law, November 2023.
- "More Than Pretty Pictures, Using Drones in Forensic Investigations"
Defense Trial Counsel of Indiana 28th Annual Conference, French Lick, IN, November 2021.
- "Fall Protection for Buildings"
Illinois Defense Counsel, Chicago, IL, August 2019.
- "Structural Damage and Repair Requirements"
Western Loss Association Spring Seminar, Oak Brook, IL, March 2019.
- "Metal Roofing: Installation and Damage Assessment"
Illinois Association of Mutual Insurance Companies Claims Seminar, Bloomington, IL, February 2019.
- "Fall Protection for Buildings"
Guest Lecturer for CAE 472 – Construction Site Operation
Illinois Institute of Technology, Armour College of Engineering, Department of Civil, Architectural & Environmental Engineering, February 2018.
- "ATC-45, Post Flood and Wind Safety Evaluation of Buildings"
Course Instructor, Illinois Emergency Management Agency, Rockford, IL, December 2013.
- "ATC-45, Post Flood and Wind Safety Evaluation of Buildings"
Course Instructor, Virginia Structural Engineers Council, Williamsburg, VA, July 2009.
- "ATC-45, Post Flood and Wind Safety Evaluation of Buildings"
Course Instructor, Disaster Response Training Seminar for Architects and Engineers Emergency Response Task Force, Rhode Island State Building Commissioner's Office, and Rhode Island State Emergency Management Agency, Lincoln, RI, July 2007 and June 2009.
- "Structural Health Monitoring of the Lingotto Cable-stayed Pedestrian Bridge with Optical Fiber Sensors."
Third International Conference on Structural Health Monitoring of Intelligent Infrastructure, Vancouver, British Columbia, Canada, November 2007.
- "Uncomfortable Structural Vibrations and How to Avoid Them in Structural Design"
University of Illinois Structural Engineers Association, Urbana, IL, September 2007.
- "Strain Aging Embrittlement of Cold Bent Bars."
C. R. Morin, C. R. Fischer, presented at the Session on "Understanding Fatigue and Fracture," Failure Analysis Symposium, Materials Science & Technology (MS&T) 2006 Conference and Exhibition, ASM International, Cincinnati, OH, October 2006.

“Emergency Response Engineering”

University of Illinois American Society of Civil Engineers, Champaign, IL, October 2006.

“Roof Failure Due to Snow: The Implications of Improperly Applying Code Provisions.”

3rd International Conference on Forensic Engineering, London, UK, November 2005.

“Masonry Design”

Guest Lecturer for ARC 343 – Architectural Structures III

Judson College, Architecture Department, November 2002 and November 2004.

“Planning and Procedures for Post-Disaster Structural Evaluations”

Course Instructor for seminars at:

Structural Engineers Association of Illinois, Bloomington, IL, April 2003.

Structural Engineers Association of Utah, Salt Lake City, UT, October 2003.

Delaware Valley Association of Structural Engineers, Philadelphia, October 2003.

Structural Engineers Association of Vermont, Randolph, VT, November 2003.

Structural Engineers Association of Illinois, Chicago, IL, January 2004.

Structural Engineers Association of Arizona, Phoenix, AZ, April 2004.

Structural Engineering Association of Rhode Island, Warwick, RI, June 2004.

Structural Engineers Association of Montana, Helena, MT, November 2004.

Structural Engineers Association of Massachusetts, Boston, MA, April 2007.

“Understanding Structural Distress and Structural Assessments”

Mutual Inspectors and Adjusters Association, Des Moines, IA, March 2004.

“The Ins and Outs of Roofing”

National Association of Mutual Insurance Companies Claims Conference, Tampa, FL, February 2004.

“Everything You Ever Wanted to Know... Under One Roof”

Illinois Association of Mutual Insurance Companies Annual Convention, Peoria, IL, August 2003.

“Post-Disaster Structural Assessment”

Guest Lecturer for CAE 472 – Construction Site Operations

Illinois Institute of Technology, Civil and Architectural Engineering Department, March 2003.

“Preliminary Impressions from the World Trade Center Disaster”

Central Illinois Chapter of Structural Engineers Association of Illinois, Bloomington, IL, March 2002.

“Structural Disaster Preparedness Issues”

University of Illinois American Society of Civil Engineers, Urbana, IL, March 2002.

“Structural Disaster Issues”

Chicago Committee on High Rise Buildings, Chicago, IL, January 2002.

“World Trade Center Disaster: Examining Structural and Geotechnical Damages and Perturbation to Our Local Community”

National Science Foundation Earthquake Engineering Research Center, Urbana, IL, November 2001.