

Curtis J. Schroeder | Associate III



EDUCATION

- Michigan Technological University
 - Bachelor of Science, Civil Engineering, 2009
- Purdue University
 - Master of Science, Civil Engineering, 2011
 - Doctor of Philosophy, Civil Engineering, 2018

PRACTICE AREAS

- Bridge Engineering
- Field Inspection
- Structural Evaluation
- Nondestructive Testing
- Steel Structures
- Weld Quality Assessment

REGISTRATIONS

- AWS Certified Welding Inspector
- NHI Course 130055 - Safety Inspection of In-Service Bridges
- NHI 420018 - Instructor Development Course
- Professional Engineer in WI

PROFESSIONAL AFFILIATIONS

- SMDI Steel Bridge Task Force
- SMDI Welding Advisory Group
- TRB AFH 70 Committee

CONTACT

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EXPERIENCE

Curtis Schroeder joined WJE in March 2019 with a background in inspection and evaluation of steel bridges. Dr. Schroeder is skilled in advanced inspection techniques for the fabrication of new welded steel structures and the evaluation of existing steel structures using fitness for service (FFS) assessments. He completed his PhD with research on the use of phased array ultrasonic testing (PAUT) of steel bridge welds. Prior to his work as a research assistant, Dr. Schroeder worked for five years at Fish & Associates, Inc. (now Fickett Structural Solutions), where his responsibilities were centered on nondestructive testing research using PAUT and writing engineering guidance documents for improved fatigue and fracture design of steel structures and FFS evaluation of members with existing flaws. Dr. Schroeder also has aided in the development, revision, and instruction of training courses in welding and bridge inspection.

REPRESENTATIVE PROJECTS

Bridge Engineering

- 106th Street Bascule Bridge - Chicago IL: Inspection and rehabilitation; magnetic particle testing of brake hub (ongoing)
- Lake Shore Drive Girder Fracture - Chicago, IL: Investigation, ultrasonic assessment, finite element modeling, and repair; bridge girder jacking under live loads (ongoing)
- US-163 over San Juan River - Mexican Hat, UT: Field instrumentation on steel through-arch bridge*
- Sherman Minton Bridge over the Ohio River - Louisville, KY: Field instrumentation and long-term remote monitoring; ultrasonic inspection of bridge welds*
- Hoan Bridge over Milwaukee Harbor - Milwaukee, WI: Visual and PAUT inspection of intersecting welds; evaluation of cracks*
- Delaware River Bridge - Philadelphia, PA: Investigation of fracture; ultrasonic testing inspection plan*
- International Bridge - Sault Ste. Marie, MI: Fracture critical inspection; ultrasonic and magnetic particle testing of link bars and pins*

- Washington Avenue Bridge over the Mississippi River - Minneapolis, MN: PAUT inspection and evaluation of hydrogen cracks*
- Bridge 29 over Holston River - Kingsport, TN: Field inspection and evaluation of pins; load rating*

Research and Testing

- NCHRP Project 14-35: Development of revised acceptance criteria for PAUT of bridge welds; investigation of bridge steel acoustic properties; FFS parametric studies*
- NCHRP Project 10-72: Performance testing of bridge deck wearing surfaces; investigation of load distribution and fatigue resistance of modular bridge decks*
- NCHRP Synthesis 489: Synthesis to evaluate use of field welding repairs and retrofits on highway bridges*
- TPF-5(238), Design and Fabrication Standards to Eliminate Fracture Critical Concerns in Two-Gridder Bridge Systems: Construction of experimental test setup; testing full-scale girders; fracture mechanics modeling*
- Fatigue and Fracture Library for Inspection, Evaluation, and Repair of Vehicular Steel Bridges: Documentation of key factors contributing to damage modes; development of detail and repair libraries*
- WisDOT CFIRE 08-03, Study on Impact of OSOW Vehicles on Complex Bridges: installation and design of monitoring system; development of calibrated analytical models*
- Procedures for Ultrasonic Phased Array on USACE Bridges: PAUT on bridge welds, pins, and gusset plates; comparison of PAUT to UT, radiographic, and other techniques*

Training

- USACE Fracture Critical Bridge Inspection: Development of 4.5 day training course; course instructor*
- Purdue University, S-BRITE Center - West Lafayette, IN: Instructor for "Inspection of Steel Bridges for Fatigue" and "Welding in an Infrastructure System" training courses*

*Project work performed prior to working with WJE