NEDERVELD
Nederveld Inc.
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Mark Herder, PE

Forensic Engineering Expertise

Structural Analysis/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 and structural engineer, replacement designs are provided upon request.

Origin & Cause
Determine the source and responsible party or element related to the failure of a structural or architectural element or water damage in a building. Examples of past work include failure of roofing and wall cladding, causing moisture entry, humidity, and condensation-related losses and groundwater entry.

Building Fenestration/Building Envelope
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.

Inspection and Evaluation of Roofing Systems
This includes steep and low slope roofs as well as various types of roofing materials, including both common and unique roofing applications. Past work involved offering opinions and repair methods related to installation deficiencies and storm-related damages, including for hail and wind.

Qualifications & Training

- Roof Systems, Simpson Strong-Tie, October 2021
- Truss Fundamentals, Simpson Strong-Tie, October 2021
- Changes in Wind Design with ASCE 7-16, Simpson Strong-Tie, October 2021
- Deck Building 101 – Beginner's Course, Simpson Strong-Tie, October 2021
- Deck Inspection for New and Existing Construction, Simpson Strong-Tie, October 2021
- Continuous Load Path, Simpson Strong-Tie, October 2021
- Boring and Notching in Wood-Frame Construction, Simpson Strong-Tie, October 2021
- Residential Construction Plans & Building Code Basics, Simpson Strong-Tie, October 2021
- Wood, Steel, and Concrete Deterioration, Simpson Strong-Tie, October 2021
- Code Requirements for Conventionally Framed Roofs, Simpson Strong-Tie, October 2021
- Delegated Design: Effective Project Management for Designers, Simpson Strong-Tie, October 2021
- Avoiding Ethical Pitfalls in Failure Investigations, ASCE, March 2020
- Structural Building Condition Surveys, Looking for Trouble, ASCE, March 2020
- The Steel Conference, AISC/NASCC, April 2019
- Easy to Design Tools, Comparing Simplified Tables and Software, HILTI, March 2019

- Ground Improvement Technology and Applications, Subsurface Constructors, March 2019
- Thermal Bridging Solutions and Thermal Breaks, Fabreeka International, June 2018
- The Steel Conference, AISC.NASCC, April 2018
- Anchor 201: Technology of Adhesive Anchors and the Effects of Varying Field Conditions, HILTI, January 2018
- Steel Deck Design and the Diaphragm Design Manual – 4th Edition, Simpson StrongTie, November 2017
- Concrete Slab Design, Steel Armored Joints, Steel Fiber, Reinforced Concrete, PSCS, September 2017
- Fastening 101: Hands-On-Training, DeWalt/NCSEA, June 2017
- Top Things to Know About HSS Connections, Atlas Tube, June 2017
- Masonry 101, The HSW Course, Masonry Institute of Michigan, May 2017
- The Steel Conference, AISC, March 2017
- Anchoring Principles and Design, HILTI, February 2017
- Anchoring Principles and Design, HILTI, February 2017
- Transitioning to ACI 318-14, Structures and Codes Institute, February 2017
- The Specification, Manufacture, and Design of Light Gauge Steel Trusses, AEGIS Metal Framing, January 2017

Education

Master of Engineering – Civil Engineering
Michigan Technological University, Houghton, MI
April 2011

Bachelor of Science in Architecture
Bachelor of Science in Civil Engineering
Lawrence Technological University
May 2009

Licenses & Certifications

PE - Professional Engineer
Licensed by the State of Michigan - Number 6201062725
LEED AP (LEED Accredited Professional) - 2009

Employment History

Forensic Engineer
Nederveld, Inc.
2020 – Present
Duties include forensic engineering analysis relating to building pathology, structural damage due to fire, structural damage from vehicle impacts, storm damage (wind, snow, hail), seismic and water loss events, calculations, and plan of repair design.

Lead Structural Engineer

HED – Harley Ellis Devereaux, Southfield, MI
2017 – 2020
Duties included serving as lead project engineer providing structural design and project discipline management of commercial, institutional, technological process and various project types. Actively develop and maintain relationships with clients and consultants to successfully extend and expand project opportunities. Compose and manage the project discipline budget, tasks, and coordinate the effort within the project structural group. Engage all disciplines, clients, and project team members to select appropriate structural systems and solutions that address the challenges unique to each project. Formulate and develop project costs and scope estimates and reviews with project teams members and clients. Compose collaborative, coordinated, and thorough construction documentation incorporating CAD and BIM features. Ensure efficient, compliant, and comprehensive and timely completion of all project phases. Develop project specifications as well as drawing standards and typical details for shared department use. Evaluate and execute design and analysis tasks for foundations, steel framing, reinforced concrete superstructures, masonry, and wood for new retrofit and repurposed projects, equipment, and buildings.

Structural Engineer
Black & Veatch, Ann Arbor, MI
2011 – 2017
Duties included lead design engineer for manufacturing, mixed-use, and industrial projects with varied project requirements and structural systems, including retrofit of existing facilities. Designed structural systems for both shallow and deep foundations. Performed engineering peer reviews and supported constructability analyses. Developed design templates and responsible for coordination with all department teams throughout the design process. As a Structural Field Engineer, duties included on-site civil/structural engineering representatives for two large power generation retrofit projects with a combined project value greater than $800 million. Supported structural foundation, steel superstructure, mechanical and piping erection, and equipment installation construction activities. Organized and lead coordination meetings with various contractors and the client. Performed design review with the office and designed solutions wherever possible from site.

Structural Engineering and Architectural Intern
Wiss, Janney, Elstner Associates, Bingham Farms, MI
2008

Professional Affiliations

Member: American Institute of Steel Construction (AISC)