

Paul Warner, 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 engineer, replacement designs are provided upon request. Examples of past work include analysis of structures (concrete, steel, wood, and masonry) and various damage assessment of building structures after a fire, vehicle impact, snow overload, and tornado.

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.

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.

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 repairs related to installation deficiencies and storm-related damages, including for hail and wind.

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.

Qualifications & Training

- Glue Laminate and Cross Laminated Timbers, ASCE Webinar, December 2024
- Post Tensioning Concepts and Practice, ASCE Webinar, December 2024
- Engineering Judgement Structural Renovation of 100 yr old barn, ASCE Webinar, December 2024
- Construction and Management of Sidewalks, ASCE Webinar, December 2024
- Introduction to Structural Fire Engineering, ASCE Webinar, December 2024
- Curtain Wall Primer, ASCE Webinar, December 2024
- Engineering Practice for Wetting Induce Collapse of Soils, ASCE Webinar, December 2024
- Geo-Structural Investigation of Existing Structures, ASCE Webinar, December 2024
- Understanding the Applicability and Proper Use of Commonly Available Weather Data in Forensic Engineering, National Academy of Forensic Engineers 2023 Summer Conference, July 2023
- Subject Ability to Characterize g's in Relation to Activities of Daily Living, National Academy of Forensic Engineers 2023 Summer Conference, July 2023
- Forensic Investigation of Wood Boxcar Flooring, National Academy of Forensic Engineers 2023 Summer Conference, July 2023
- Metal Roofing Systems, University of Wisconsin - Madison, December 2022
- Low Slope Roofing Systems, University of Wisconsin - Madison, November 2022

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This CV is not a solicitation for services and is provided as information only. Retention of this expert can only be obtained through a mutually agreed upon Letter of Engagement.

- Roof Technology and Science II, IIBEC Webinar, December 2020
- Design of Multi-Story Light-Framed Shear Walls, ASCE Webinar, November 2020
- Seismic Screening of Buildings Using ASCE 41-13, ASCE Webinar, November 2020
- Introduction to the Design of Wood Lateral-Force Resisting System in Accordance with 2015 IBC, ASCE Webinar, November 2020
- Roof Drainage Design, IIBEC Webinar, November 2020
- Masonry Movement Joints, IIBEC Webinar, November 2020
- Roof Technology and Science I, IIBEC Webinar, November 2020
- Infrared Thermography: The Detective in Your Toolbox, IIBEC Webinar, October 2020
- Field Study of Thermal and Hygrothermal Performance on Attics with Various Retrofitting Strategies, IIBEC Webinar, October 2020
- By Others – Transitions Between Enclosure Systems, IIBEC Webinar, October 2020
- ASCE Canon 8 – Ethics Guiding the Profession to Inclusive Future, ASCE Webinar, October 2020
- Diagnosis Repair and Restoration of Building Facades, ASCE Webinar, October 2020
- Evaluating Damage and Repair of Metal Plate Connected Wood Trusses, ASCE Webinar, October 2020
- Renovation of Wood Trusses, ASCE Webinar, October 2020
- Design with NDS 2015 Overview and Changes, ASCE Webinar, October 2020
- Interior Building code Essentials for Wood Construction: Fire Protection Basics for Structural Engineers, ASCE Webinar, October 2020
- Engineering Mid-Rise Buildings of Wood Construction, ASCE Webinar, October 2020

Education

Master of Civil Engineering
University of Kansas
December 2011

Bachelor of Civil Engineering
University of Nebraska – Lincoln
December 2007

Educational Presentations

Utilizing ASCE 7 to Determine Wind Speeds Required to Overturn a Structure
National Academy of Forensic Engineers, 2023, Summer Conference, July 2023

Presentation to Kansas Governor's Office 2010
"The Science and Art of Routing High-Voltage Transmission Lines"

Licenses & Certifications

PE - Professional Engineer
Licensed by the State of Nebraska – Number E-14239
Licensed by the State of Iowa – Number P24326
Licensed by the State of Colorado – Number PE.0058013
Licensed by the State of Idaho – Number 20297
Licensed by the State of Wyoming – Number PE16744
Licensed by the State of Kansas – Number 28537
Licensed by the State of Utah – Number 14200091-2202

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.

Structural Engineer
Black and Veatch
2008 – 2020

Renewable Energy 2017-2020

Design of New Wind Turbine Foundations. GE 2.8-127 (Lead Engineer) Good Hope, IL – Responsible for the sub-contract development, negotiation, and management of sub-contracts for foundations installation, turbine erection, Operations and Maintenance building, and meteorological tower. Project included union craft for execution.

Vestas V136, V110 (Engineer of Record) Wyoming

Responsible for the design of foundations, manage drafting and engineers to meet schedule and budget. Developed construction specifications and review of contractor submittals.

Owners Engineer Reviews for Wind Farms Iowa – Responsible for the review of proposals, designs, and change orders for the owner. Advised the owner on acceptable change orders and associated cost of those change orders. Provided technical advice for construction RFI's and responses.

Independent Reviews for Equity Investors – General oversight of the foundation reviews, specifications, and methodology applied by the contractor in designing and constructing the wind turbine foundations.

Analysis of Repower Foundations (Lead and Engineer of Record) – Overall lead for the review, design, and analysis of Owner's fleet of foundations for repowering with new wind turbine components. Lead a group of engineers in developing tools and processes to quickly analyze various turbine scenarios. Developed field process for coring and non-destructive testing of operating wind turbine foundations. Wrote detailed field reports and memos to document work to be filed with the public utilities commission.

Oil and Gas 2018

Modularization for Shipping and Lifting – Lead a team of engineers in the design and layout of structural steel such that the modules could be shipped on trucks and installed in the field. Included developing rigging points and reinforcement of the frames for lifting by cranes and shipping by truck.

Conventional Generation 2012-2016

Power Plant Services Design Lead, 2016

Oregon Transformer replacement – Developed engineering and construction plan for plant outage to replace 3-phase transformer for three (3) single phase transformers. Developed level 1 construction schedule and cost estimate.

Emergency Transformer replacement – Designed retrofit for main power transformer at coal fired power plant. Required detailed design and analysis of existing containment and firewalls using finite element methods.

Designed 180' tall Recycle Ash Building for AQCS project, 2012 – Responsible for performing detailed calculations and design of the structural steel building supporting recycle ash tanks and silos on elevated floors.

Design of Wartsilla Reciprocating Engine Natural Gas Power Plant 2013

Responsible for the management of the pre-engineered metal building contractor prior to construction. Responsibilities included tracking progress and change orders for design. Coordinated the interface between the engineering for the balance of plant with the engine manufacturer and building designer.

Power Distribution 2009-2012, 2017

Transmission Line Design, 2009-2012

Responsible for detailed design of transmission line including foundations, conductor sizing, and pole spotting. Design included steel monopole and lattice tower structures. Attend public meetings to discuss project technical details with landowners and stake holders.

500kV Substation Deadend Detailed Design, 2017 - Responsible for the detailed design of six (6) 500kV substation deadend structures. Design included sizing of main framing members and design of all welded and bolted connections.

Nuclear Energy 2008

Conceptual Design of GE Nuclear Power Plant for ESBWR
Construction Experience, BLACK & VEATCH

Cardinal Point Wind Farm Field Engineer/Superintendent Wind Farm, union craft - Illinois, 2019-2020 – Coordinated all foundation and turbine erection RFI's. Worked as offload superintendent for delivery of turbine components. Worked as rotor build superintendent for ironworker crew. Managed met tower and foundation contract from the field. Coordinated spare parts from GE and GE RFI's. Aided field project management in development of change orders, scope changes, and erection scheduling.

Valmy transformer replacement - Nevada, 2016

Site support engineer for 10 days to help with the removal of an existing transformer and installation of a new transformer. Reviewed and planned for rerouting of cables, temporary containment, and modification of iso-phase bus duct.

Field Engineer AQCS Project, union craft - Michigan, 2013-2015

Field engineer responsible for RFIs and contract technical reviews for dry scrubber, pulse jet fabric filter house, structural steel, flue gas duct, induction fans, and pre-engineered metal buildings. Lead weekly meetings with dry scrubber vendor and induction fan vendor to resolve outstanding technical items. Daily meeting with installation technical advisors and general foreman/superintendent.

Professional Affiliations

Member: American Society of Civil Engineers (ASCE)

Publications

Utilizing ASCE/SEI 7 to Estimate Wind Speeds for Forensic Investigations
Journal of the National Academy of Forensic Engineers 40 (2), 2024

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