

William E. Pelton

EIT

Senior Staff Consultant



William Pelton is a Senior Staff Consultant for ESI. Mr. Pelton has professional experience of over 7 years in forensic engineering and project management. He possesses skills in a wide range of engineering services with an extensive knowledge of structural problems and deficiencies. He specializes in performing assessments of roofing systems, façade systems, and parking garage structures for commercial and residential properties to determine the extent of damage that may have resulted from exposure to wind/hail or other natural weather phenomena and subsequently resulted in water intrusion or other damage to the structure. Additionally, his work has included investigations of construction defects for residential and commercial structures. He has provided his clients with design/repair drawings and specifications to remediate damage to existing structures, as well as performed construction administration services on the repairs after they are completed. He has extensive knowledge in the application of various building codes and safety codes and how they apply to the repair and remediation of existing structures.

Mr. Pelton has also performed geotechnical assessments of soils and building foundations using in-situ soil testing (cone penetrometer test) and soil density testing (proctor compaction test) to determine the cause, origin, extent of damage to building foundation components (footings, slabs, drainage systems). He has performed material testing for soils and concrete on construction sites, and well as in lab testing and analysis of various construction materials.

Mr. Pelton also has experience with performing wind uplift pressure calculations for roofing systems on residential and commercial structures. He is familiar with the composition and installation methods for residential and commercial roofing systems, and how wind uplift pressures and building code requirements determine the composition and installation of these roofing systems.

Education

BS, Civil Engineering. University of Minnesota (Duluth). 2015

Contact Information

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ESi St. Petersburg

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Areas of Specialization

- Structural Forensics
- Cause and Origin Damage Assessments
- Damage/Failure Analysis
- Settlement/Subsidence Analysis
- Commercial and Residential Structure Investigations
- Building Envelope Investigations
- Roof System Investigations
- Parking Garage Investigations
- Construction Defect Investigations
- Storm Water Investigations
- Hail Damage Assessments
- Wind Damage Assessments
- Doors and Windows Assessments
- Materials Testing and Analysis
- Compliance & Code Reviews

Positions Held

Engineering Systems Inc., St. Petersburg, Florida

- Senior Staff Consultant, 2023 – Present

P. Marshal & Associates, Roswell, Georgia

- Staff Engineer, 2018 – 2023

Penta Engineering, Norcross, Georgia

- Staff Engineer, 2017 – 2018

Braun Intertec, Duluth, Minnesota

- CMT Special Inspector, 2014-2017

Project Experience/Highlights

Investigations

Hurricane Damage Investigations – Residential and Commercial Properties

- Performed structural forensic investigations of residential and commercial buildings impacted by hurricane events, including post-storm condition assessments following high-wind and wind-driven rain exposure.
- Conducted cause-and-origin evaluations with emphasis on building envelope performance, water intrusion pathways, wind damage mechanisms, and roof system behavior.
- Differentiated storm-related damage from pre-existing conditions through field observations, materials evaluation, and review of construction practices, identifying design non-compliance and material deterioration where present.
- Prepared forensic engineering reports providing opinions on damage causation and scope, and developed repair recommendations where warranted to address observed deficiencies.

Warehouse Roof Collapse – Tampa, FL

- Performed structural forensic investigation of a ~14,000 SF roof collapse at a 1970-era warehouse, including site inspections and document review.
- Evaluated original design criteria versus current building code requirements and performed structural analysis of roof framing and load paths.
- Prepared a forensic engineering report documenting causation, extent of damage, and conceptual repair recommendations.

Parking Garage DT Connector Plate Failure Investigation

- Performed a structural forensic construction defect investigation of distressed double-tee (DT) connector plates at a parking garage to evaluate reported connection failures.
- Conducted cause-and-origin analysis including load evaluation of DT connectors, review of connection detailing.
- Executed materials testing and field investigation activities, including GPR scanning to locate embedded plates and selective destructive demolition to extract DT connector embed plate samples for laboratory testing and material property evaluation.
- Identified construction deficiencies related to inadequate weld execution during installation and documented reduced material capacity in select embed plates; helped prepare a forensic engineering report presenting findings, opinions on causation, and scope of damage.