

# Andrew W. Johnson

PE, SE.

Principal and Senior Director, Civil, Structural  
& Environmental Engineering



Mr. Johnson is a Principal and the Senior Director of the Civil/Structural Engineering Practice Group with Engineering Systems Inc. (ESI). He has over 25 years of structural design, conducting inspections, and construction experience, and has provided a wide range of forensic/investigation related services. These services include failure analysis, cause and origin, scope of damage, scope of repairs and repair protocols, building code analysis, and expert testimony for commercial and residential property damage. His work has included investigations into construction defects for commercial, industrial, and residential projects, design work in the areas of structural strengthening, structural code analysis, and repair plans for structural failures, and cause and origin assessments for commercial and industrial projects, including foundation settlement, sinkholes, fire damage, and structural failure analysis.

Mr. Johnson also specializes in commercial and residential roof damage assessments due to wind, hail, moisture intrusion, and fire damage. His work in these areas include cause and origin of roof covering damage, scope of damage, scope of repairs, and repair versus replacement analysis. Mr. Johnson has conducted roof damage assessments in Florida, Texas, Louisiana, New York, Idaho, Alabama, Mississippi, Oklahoma, Colorado, Missouri, Kentucky, Tennessee, North Carolina, and South Carolina. Due to his experience throughout the country, Mr. Johnson is familiar with multiple roofing systems, including but not limited to built-up roof systems, single-ply and multiple ply systems, asphalt shingles, clay and concrete tile, wood shake, TPO, SPF, and EPDM systems. In addition, Mr. Johnson also specializes in the assessment of marine structures, both inland and coastal. Mr. Johnson's experience in this area has included the inspection and evaluation of piers, both fixed and moveable, marinas, wharfs, wave attenuating systems, bulkheads, seawalls and breakwater structures. Mr. Johnson has inspected marine structures throughout the United States and in the Caribbean for both property owners, attorneys and insurance companies.

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## Education

B.S., Civil Engineering, University of South Florida, 2004

## Contact Information

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## ESi Tampa

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Suite 200, St. Petersburg, FL 33716

## Areas of Specialization

- Cause and Origin Damage Assessments
- Structural Analysis & Design
- Damage / Failure Analysis
- Building Code Analysis
- Geotechnical Investigations
- Settlement / Subsidence Analysis
- Sinkhole Investigations and Structural Damage Determination F.S. 627.706
- Foundations Analysis
- Building Envelope Investigations
- Roof Damage Assessments (Hail & Wind)
- Water Leakage Investigations
- Marine Structures
- Retaining Wall Systems
- Wind Damage Assessments

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## Licenses & Certifications

- State of Alabama P.E. License 32658-E
- State of Arizona P.E. License 56310
- State of Arkansas P.E. License 14959
- State of Colorado P.E. License 45648
- State of Connecticut P.E. License 34083
- State of Florida P.E. License 69933
- State of Georgia P.E. License PE034725
- State of Georgia (Structural) S.E. License SE001292
- State of Idaho P.E. License P-14801
- State of Indiana P.E. License 11900628
- State of Iowa P.E. License 22060
- State of Kansas P.E. License 22320
- State of Kentucky P.E. License 27890
- State of Louisiana P.E. License PE.0035729
- State of Maryland P.E. License 05-54804
- State of Mississippi P.E. License 20025
- State of Missouri P.E. License 2011021684
- State of New Jersey P.E. License 24GE05134500
- State of New Mexico P.E. License 20793
- State of New York P.E. License 089274-1
- State of Nevada P.E. License 027039
- State of North Carolina P.E. License 037280
- State of Ohio P.E. License 75783
- State of Oklahoma (Structural) P.E. & S.E. License 25606
- State of Pennsylvania P.E. License PE078874
- State of Rhode Island P.E. License 11304
- State of South Carolina P.E. License 28326
- State of Tennessee P.E. License 114095

- State of Texas P.E. License 105659
- State of Vermont P.E. License 18.0134528
- State of Virginia P.E. License 0402048965
- State of Washington P.E. License 48510
- State of Wisconsin P.E. License 102609 - 6
- Puerto Rico P.E. License 28146

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## Languages

- English.

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## Positions Held

### **Engineering Systems Inc., St. Petersburg, Florida**

- Principal, Present
- Senior Managing Consultant, 2019 – 2021
- Senior Director, Civil Engineering, 2017 – Present
- Senior Consultant, 2015 - 2018

### **Halliwell Engineering Associates, Tampa, Florida**

- Senior Civil / Structural Engineer, 2009 - 2015

### **Center for Innovative Structures Inc., Tampa, Florida**

- Project Manager / Structural Engineer, 2003 - 2009

### **Austin Engineering Group, Inc., Tampa, Florida**

- Project Manager / EIT, 2000 - 2003

### **Nicholson Engineering Associates, Brooksville, Florida**

- Senior Building Designer and Inspector, 1996 - 2000

### **Brundage Design, Inc., Spring Hill, Florida**

- Residential & Commercial Structural Draftsman and Building Inspector, 1994 - 1996

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## Continuing Education

- Design of Reinforced Concrete Using the ACI Code – Flexural Analysis of Beams (Red Vector)
- Design of Reinforced Concrete Using the ACI Code – Design of Rectangular Beams and One-Way Slabs (Red Vector)

- Corrugated Steel Pipe Durability (Red Vector)
- Pole Structural Loading (Red Vector)
- Pipe Support Systems (Red Vector)
- Roofing in High Velocity Hurricane Zones (Red Vector)
- Ductile Iron Pipe (Red Vector)
- Prestressed Concrete – Hollow Core (Red Vector)
- Prestressed Concrete II – Structural Design (Red Vector)
- Structural Condition Assessment of Existing Structures (ASCE)
- Circuit Civil Mediation Training (Dispute Resolution, Inc.)
- Building Pathology: Parapets & Decks (Red Vector)
- Wood Design: Design Loads 2 – Lateral & Wind Forces (Red Vector)
- Retaining Wall Design – Parts 1 & 2 (Red Vector)
- Reinforced Concrete Tilt-Up Panels (Red Vector)
- Micro-piles: Design, Part 1 (Red Vector)
- Micro-piles: Construction Techniques and Materials (Red Vector)
- Building Pathology: Foundations (Red Vector)
- Wind Loads I: ASCE 7-05 Revealed (Red Vector)
- Masonry Design: Foundation and Retaining Walls (Red Vector)
- Driven Piles: Pile Type and Selection (Red Vector)
- Wind Loads ASCE 7-10 (Red Vector)
- Concrete Evaluation & Repair 1 (Red Vector)
- Brittle Fracture for Steel Structures (Red Vector)
- Sinkholes in Florida: Engineering and Legal Issues (Haag Engineering)
- Florida Certified Neutral Evaluator – Sinkhole Investigations
- Driven Piles – Static Analysis – Pile Groups (Red Vector)
- Pier & Beam Foundation Design (Red Vector)
- Design of Buildings for Coastal Flooding (Red Vector)
- Bridge Inspection & Maintenance (Red Vector)
- Designing Buildings for Tornadoes (Red Vector)
- Residential Construction for Coastal Areas (Red Vector)

- Geotechnical Engineering: Testing for Design and Construction (Red Vector)
- Structural Steel Connection Design (Red Vector)
- Stress & Strain in Soils (Red Vector)
- Geotechnical Engineering: Descriptions & Classifications of Soils (Red Vector)
- 3 Must Know Differences in Roofing Codes (Red Vector)
- Advantages and Pitfalls of Unreinforced Masonry Construction (PDHEngineer.com)
- Ethics for Professionals (Red Vector)
- Accessible Parking (Red Vector)
- The Simplified Design and Practical Use of Engineered Wood Products (PDHEngineer.com) Designing Foundation Repairs (Red Vector)
- Concrete Fundamentals - Concrete Slab on Grade (Red Vector)
- Anatomy of Construction Defects (Red Vector)
- Hurricane Mitigation Techniques and Inspection (Red Vector)
- Soils and Foundations: The Low Down on Dirt (Red Vector)
- Indiana Engineers' Laws & Rules (Red Vector)
- Design of Reinforced Concrete Using the ACI Code – Serviceability (Red Vector)
- Seismic Diaphragm Demands (Red Vector)
- Reinforced Masonry Design (Red Vector)
- Wind Design Using ASCE 7-16 (Red Vector)
- Structural Masonry Materials (Red Vector)
- Structural Insulated Panels (Red Vector)
- Structural Design Philosophies ASD LRFD (Red Vector)
- Roofing Materials – Concrete Tiles (Red Vector)
- Protecting People Against Terrorist Attacks – Design Considerations for Safe Rooms and Shelters (Red Vector)
- Wood Design Using the 2012 Wood Frame Construction Manual (Red Vector)
- Protecting People Against Terrorist Attacks - Structural Design Criteria (Red Vector)
- Use of Steel in Design & Construction (Red Vector)
- A Professional Engineers Standard of Care (Red Vector)
- 2020 Advanced Florida Building Code – Building, 7th Edition (Red Vector)

- Coastal Engineering: Sea Level Rise (Red Vector)
- Ethics for the Practicing Engineer – Organizational Issues (Red Vector)
- Hurricane Damage: Wind vs. Water Determination (Red Vector)
- Movement Joints in Brick Masonry (Red Vector)
- Protecting People Against Terrorist Attacks: Chemical, Biological, and Radiological (CBR) Threat Protection (Red Vector)
- Concrete 1: Evaluation and Causes of Damage (Red Vector)
- Principles of Professional Construction Management (Red Vector)
- Prestressed and Reinforced Concrete – Choosing the Best Method for Your Project (Red Vector)
- Leak Detection for Roofs (Red Vector)
- Prestressed and Reinforced Concrete - Choosing the Best Method for Your Project (Red Vector)
- Land Development Projects - Design of Infrastructure (Red Vector)
- Hurricane Damage Investigations - Wind vs. Water (Red Vector)
- Florida Engineers' Laws and Rules V.13 (Red Vector)
- Florida Engineers' Laws and Rules [V.11] (Red Vector)
- Fire Essentials and Fire Science (Red Vector)
- Ethics for the Practicing Engineer - Managing Risks Imposed on the Public (Red Vector)
- Ethical Decision Making for Engineers #1 (Red Vector)
- Ethical Decision Making for Engineers #2 (Red Vector)
- Driven Piles - Static Analysis - Pile Groups (Red Vector)
- Driven Piles - Pile Type and Selection (Red Vector)
- Designing with Structural Composite Lumber (Red Vector)
- Design of Steel Elements for Second Order Effects (Red Vector)
- Design of Reinforced Concrete Using the ACI Code - Intro to Columns (Red Vector)
- Design of Buildings Using Insulated Concrete Forms (ICF)
- Corrugated Steel Pipe Durability (Red Vector)
- Concrete Evaluation & Repair 1 (Red Vector)
- Commercial Structural and Building Systems Essentials (Red Vector)
- Choosing the Best Structural Lateral Force Resisting System (Red Vector)
- Basic Wind Loads I - ASCE 7-05 Revealed (Red Vector)

- Basic Wind Loads ASCE 7-10 (Red Vector)
- Aquifer Remediation (Red Vector)
- 2015 National Design Specification for Wood Construction (Red Vector)
- 2015 International Building Code Essentials - Structural Safety (Red Vector)
- 2015 International Building Code Essentials - Significant Changes to Structural Provisions (Red Vector)
- 2014 Florida Building Code Advanced 5th Edition - Structural Summary of Provisions (Red Vector)
- Concrete Fundamentals - Concrete Slab on Grade (Red Vector)
- Design Foundation Repairs (Red Vector)
- Soils and Foundations - The Low Down on Dirt (Red Vector)
- Accessible Parking (Red Vector)
- Historic Terracotta Restoration Guidelines and Details (International Masonry Institute – “IMI”) The Simplified Design and Practical Use of Engineered Wood Products (DPD)
- Geotechnical Engineering: Deep Foundations (Red Vector)
- Geotechnical Engineering: Descriptions and Classifications of Soils (Red Vector) Geotechnical Engineering: Repairing Soil Deformations and Settlement (Red Vector) Roofing Materials - Concrete Tiles (Red Vector)
- Geotechnical Engineering: Stress and Strain in Soils (Red Vector)
- Structural Insulated Panels (SIPs) (Red Vector)
- Geotechnical Engineering: Subsurface Investigations (Red Vector)
- Unreinforced Masonry Design (Red Vector)
- 2017 Florida Building Code Advanced 6th Edition: Summary of Structural Provisions – Internet (Red Vector)

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## Professional Affiliations/Honors

Florida Engineering Society (FES)  
National Society of Professional Engineers (NSPE)  
National Academy of Forensic Engineers (NAFE)  
Professional Engineers in Private Practice (PEPP)  
National Council of Examiners for Engineering and Surveying (NCEES)  
American Concrete Institute (ACI)  
American Society of Civil Engineers (ASCE)

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## Technical Committee Memberships

ACI Committee 224 - Control of Cracking in Concrete Structures – Member  
ASTM Committee C14 – Glass and Glass Products  
ASTM Committee D08 – Roofing and Waterproofing  
ASTM E58 – Forensic Engineering  
Post Tension Institute (PTI)  
CRT-70 – System Qualification Testing and Certification (Sub-committee of PTI)  
M-55 Grouting – (Sub-committee of PTI)  
National Roofing Contractors Association (NRCA)  
ASTM E06 - Performance of Buildings, PTI committee DC-80 - Repair, Rehabilitation and Strengthening and  
PTI Committee DC-25 - Parking Structures

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## Publications

“Temporary Roof Repairs and Harvesting Roof Tiles,” (2020). Andrew W. Johnson, P.E., and Edward J. Tuczak, Select chapters, 21st Annual Windstorm Insurance Conference, Hilton Orlando Buena Vista Palace, Orlando, Florida, January 26-30, 2020.

“Structures Built Over Crawl Spaces Develop Condensation Moisture and Mold Due to Improper Construction Techniques not in Compliance with Building Code Requirements Necessary for Adequate Performance”. Mel A. Underwood, P.E., Steven J. Faupel, E.I., Andrew W. Johnson, P.E., American Society of Civil Engineers’ 8th Congress on Forensic Engineering Technical Proceedings (11-2018); Co-authored paper presented on topic at the 8th Congress in November of 2018.