Noel R. Flores

PhD, PE

Senior Consultant

Dr. Noel Flores is a Senior Consultant with Engineering Systems Inc. (ESi). He has expertise in structural engineering, applied mechanics, and construction materials such as wood, masonry, mass timber, steel, and reinforced concrete.

Dr. Flores performs scientific investigations related to construction defects, failure of structural elements and components, and failure of components within building envelopes. Dr. Flores specializes in damage assessment, repair and rehabilitation design of damaged structures, structural analysis and design, and building code research and analysis. His work includes residential structures, commercial structures, large-scale heavy civil infrastructure, and military structures. Dr. Flores also works on matters involving code compliance and accidents/incidents in the built environment.

Dr. Flores has experience in the design and implementation of experimental test programs, including test designs and custom test fixtures, instrumentation with digital image correlation, data acquisition, and testing. Dr. Flores specializes in the mechanics of structures under impact and has utilized experimental methods, finite element analysis, and other numerical methods to simulate impulsive, blast-like loading on structural materials.

Dr. Flores has conducted research involving numerical modeling and experimental testing related to blast effects on cross-laminated timber with the Stewart Research Group at Georgia Tech. Dr. Flores has performed structural engineering for large-scale heavy civil projects, including repair design for the Rondout West Branch Tunnel Bypass and City Tunnel No. 3 in New York City, canal infrastructure, spillways and gates, and seawalls.

Education

PhD, Structural Engineering, Mechanics, and Materials. Georgia Institute of Technology. 2022

MS, Structural Engineering, Mechanics, and Materials. Georgia Institute of Technology. 2019

BS, Civil Engineering. Columbia University. 2012

BA, Mathematics and Italian Studies Double Major. Wesleyan University. 2010

Contact Information

nrflores@engsys.com

(470) 719-1265

ESi Atlanta

430 Technology Parkway NW
Peachtree Corners, GA 30092

Areas of Specialization

- Applied Mechanics
- Building Envelope Assessment
- Building Code Research & Analysis
- Cross-Laminated Timber & Mass Timber
- Construction Defects
- Damage Assessment
- Failure Analysis
- Heavy Civil Infrastructure
- Mechanical Testing
- Repair & Rehabilitation Design
- Shock & Impact
- Structural Analysis & Design
- Structural Condition Assessment
- Wood Materials

Licenses & Certifications

- State of Alabama PE License PE53104
- State of Georgia PE License PE043963
- State of Florida PE License PE104013
- State of Minnesota PE License PE62260
- State of New York PE License PE113549
- State of South Carolina PE License PE45838
- National Floor Safety Institute Walkway Auditor Certificate Holder
- Sunbelt MEWP Boom/Scissor Operator Certification

Positions Held

Engineering Systems Inc., Atlanta, Georgia

- Senior Consultant, 2025 – Present
- Senior Staff Consultant, 2022–2024

Georgia Institute of Technology

- Graduate Research Assistant, Structural Engineering and Mechanics of Materials Laboratory, 2018–2022
- Instructor, ARCH 8833 – Integrated Building Systems, 2021

R.J. Behar and Company, Inc., Fort Lauderdale, Florida

- Structural Engineer, 2015–2017

Department of Environmental Protection, New York, New York

- Structural Engineer, 2012–2015

Continuing Education

- **Wood Anatomy Course (SBP 6013)** – Mississippi State University, 2024
- **OSHA 30-Hour Construction Course** – OSHA, 2023
- **OSHA 10-Hour Construction Safety and Health Course** – OSHA, 2012
- **Envision Sustainability Professional (ENV SP)** – Envision, 2015

Professional Affiliations/Honors

American National Standards Institute

- Member, ANSI A14.4 Subcommittee on Safety Requirements for Job-Made Wooden Ladders, 2025 – Present

American Society of Civil Engineers

- Member, 2012 – Present

Structural Engineers Association, Georgia Chapter

- Member, 2017 – Present

Structural Engineering Institute

- Member, 2017 – Present

Publications

"Design of an Impulsive Center-Point Testing System with Realistic Boundary Conditions," **N.R. Flores**, T.R. Gentry, and L.K. Stewart, Proceedings of the 6th International Conference on Protective Structures, pp. 1289–1304, 2023.

"Behavior and Damage Characterization of Impulsively Loaded Cross-Laminated Timber," **N.R. Flores**, T.R. Gentry, and L.K. Stewart, Applied Sciences, Vol. 12, No. 23: 12076, doi:10.3390/app122312076, 2022.

"Experimental Methods for Understanding the Performance of Impulsively Loaded Cross-Laminate Timber Panels," **N.R. Flores**, PhD Dissertation, Georgia Institute of Technology, pp. 1–328, 2022.

"Towards an SDOF Model for Predicting Blast Performance of Cross-Laminated Timber," K. Sanborn, **N.R. Flores**, T.R. Gentry, and L.K. Stewart, Structures Under Shock and Impact XV, pp. 125–135, doi: 10.2495/SUSI180121, 2018.

Presentations

"From Initial Hypothesis to Vapor Drive: Two Georgia Case Studies in Diagnosing Wall-Cavity Moisture Behind Built-in Cabinetry," **N.R. Flores** and D.M. Locker, Proceedings of the 11th ASCE Forensics Congress, Lake Buena Vista, FL, 2026.

"Design of an Impulsive Center-Point Testing System with Realistic Boundary Conditions," **N.R. Flores**, T.R. Gentry, and L.K. Stewart, 6th International Conference on Protective Structures, Auburn, AL, 2023.

"Towards an SDOF Model for Predicting Blast Performance of Cross-Laminated Timber," K. Sanborn, **N.R. Flores**, T.R. Gentry, and L.K. Stewart, Structures Under Shock and Impact, Sevilla, Spain, 2018.