# 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


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**ESi Atlanta**

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**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 Minnesota PE License PE62260
- 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, 2003 – 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

"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.