NOEL R. FLORES, Ph.D., P.E.

SENIOR CONSULTANT

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Dr. Noel Flores is a Senior Consultant with Engineering Systems Inc. (ESi). He has expertise in structural engineering, applied mechanics, and construction materials including 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 also specializes in damage assessment, repair and rehabilitation design of damaged structures, structural analysis and design, and building code research and analysis. Dr. Flores has worked across several sectors including residential structures, commercial structures, large-scale heavy civil infrastructure, and military structures. Dr. Flores also works on matters involving code compliance and accidents and incidents in the built environment.

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

Prior to joining ESi, Dr. Flores conducted research including numerical modeling and experimental testing related to blast effects on cross-laminated timber (CLT) with the Stewart Research Group at Georgia Tech. Additionally, 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, and canal infrastructure, spillways and gates, and seawalls in South Florida.

Dr. Flores is fluent in Spanish.

Areas of Specialization

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

January 2025

Education

Ph.D., Structural Engineering, Mechanics, and Materials, Georgia Institute of Technology

M.S., Structural Engineering, Mechanics, and Materials, Georgia Institute of Technology

B.S., Civil Engineering, Columbia University

B.A., Mathematics and Italian Studies Double Major, Wesleyan University

Certifications

National Floor Safety Institute Walkway Auditor Certificate Holder
Sunbelt MEWP Boom/Scissor Operator Certification

Licensed Professional Engineer (P.E.)

State of Georgia .... License No. PE043963
State of Alabama .... License No. PE53104
State of Minnesota .... License No. PE62260

Continuing Education

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

Positions Held

Engineering Systems Inc. (ESi), Peachtree Corners, Georgia
  Senior Consultant, 2025 - Present
  Team Lead, 2025 - Present
  Senior Staff Consultant, 2022 – 2024

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

Teaching and Research

 Georgia Institute of Technology
  Graduate Research Assistant, 2018 – 2022
    Structural Engineering and Mechanics of Materials Laboratory

  Instructor, Fall 2021
    ARCH 8833 – Integrated Building Systems

Professional Affiliations/Honors

American Society of Civil Engineers (ASCE), Member
Structural Engineering Institute, Member

Publications/Presentations

Flores, Noel R., T. Russell Gentry, Lauren K. Stewart. "Design of an Impulsive Center-Point Testing System with Realistic Boundary Conditions". The 6th International Conference on Protective Structures (2023), Auburn University, Auburn, AL, USA.

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

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

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