



**MEL A. UNDERWOOD, P.E.  
SENIOR MANAGING CONSULTANT**

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Mr. Underwood is a Senior Managing Consultant with an emphasis in structures at Engineering Systems Inc. (ESi). For more than 20 years, Mr. Underwood has been involved in the analysis, design, construction, inspection, and forensic investigation of residential, commercial, industrial, and transportation related structures. His structural experience ranges from houses to commercial buildings, from retaining walls to bridges, and from wastewater treatment plants to electrical power plants.

Mr. Underwood has the technical, as well as the hands-on background and experience necessary to understand the functionality and purpose of the individual elements comprising the structural system in its entirety. Mr. Underwood has experience in determination of structural and material failures as related to storm damage, water intrusion, improper construction techniques, and normal wear and tear. Additional areas of practice include building code related analyses of slip/trip/fall incidents with respect to code related geometry, construction, conditions, etc.

**Areas of Specialization**

Construction Defects  
Property Loss Investigations  
Structural Forensic Investigations  
Weather Damage and Water Intrusion  
Building Materials Failure Assessments  
Building Code Related Slip/Fall Analyses  
Construction Monitoring/Repair and Restoration  
Sinkhole Investigations/Structural Damage Assessment

**Education**

M.S., Civil/Structural Engineering, Michigan State University, 1994  
B.S., Civil Engineering, Michigan State University, 1989

**Licensed Professional Engineer (P.E.)**

State of Florida... ..License No. 51753  
State of Michigan.....License No. 42729

## **Professional Affiliations/Honors**

American Society of Civil Engineers (ASCE)  
American Institute of Steel Construction (AISC)  
National Academy of Forensic Engineer (NAFE) – Affiliated as a correspondent  
Wind – An Educational Association for Windstorm Claims and Related Professional  
Chi Epsilon Civil Engineering Honor Society

## **Positions Held**

### **Engineering Systems Inc., Miami, Florida**

Senior Managing Consultant, 2014 – present

### **Engineering Systems Inc., Miami, Florida**

Senior Consultant, 2009 – 2014

### **ProNet Group, Inc., Sunrise, Florida**

Project Manager, 2008 – 2009

### **PBS&J (Post Buckley Schuh & Jernigan) (Atkins), Miami, Florida**

Structural Design Staff Engineer, 1998 – 2008

### **A.G. Lichtenstein & Associates (TranSystems), Ft. Lauderdale, Florida**

Structural Engineer, 1996 – 1998

### **BWS (Blakely Ward Stuckey), Pompano Beach, Florida**

Structural Engineer, 1995 – 1996

### **PEICO (Professional Engineering and Inspection Co.), Plantation, Florida**

Structural Engineer/Inspector, 1994 – 1995

### **Bechtel Power Corp., Gaithersburg, Maryland & Naperville, Illinois**

Structural Engineer, 1990 – 1992

### **Structures Lab MSU, East Lansing, Michigan**

Structural Engineering Lab Assistant, summer 1989

### **Underwood Roofing Co. (family owned and operated), Owosso, Michigan**

Roofing Systems Installer (commercial and residential), summers 1982 – 1988

## **Continued Education**

ASCE 8th Forensic Engineering Congress, Forensic Engineering Conference – November 2018

ASCE 8th Congress on Forensic Engineering speaker/presenter for “Structures Built Over CrawlSpaces Develop Condensation Moisture and Mold Due to Improper Construction Techniques not in Compliance with Building Code Requirements Necessary for Adequate Performance”, November 2018

ASCE 7th Forensic Engineering Congress, Forensic Engineering Conference – November 2015

ASCE Structures Congress speaker/presenter for the “Failures of Floor and Wall Tile Installations Occur Due to a Lack of Complying with the Governing Building Code Requirements by Many Professionals Involved in the Installation Process”, April 2015

15th Annual Windstorm Insurance Conference

January - 2014

Florida Engineer’s Laws and Rules (V.07), Red Vector.com, Inc.

January 2013

ASCE 6th Congress on Forensic Engineering speaker/presenter for “Florida’s 2011 Sinkhole Law Revisions Provide Needed Clarity”, November 2012

ASCE Structures Congress speaker/presenter for “Loose Mortar-Set Roof Tile Falsehood”

April 2011

HAAG Residential Roof Inspector Review/Certification Program

January 2010

ASCE 5th Congress on Forensic Engineering, Forensic Engineering Conference

November 2009

Florida Department of Transportation Design Conference

July 2006 and July 2008

Load Rating Summit, LRFR (load and resistance factor rating) for Florida’s Bridges, Florida

Department of Transportation, December 2005

Coastal Engineering: Storm Surge Course, Red Vector.com, Inc.

February 2003

Professional Engineering Ethics Course #BT-20-0110, Continuing Education Provider CEP

00004, March 2002

Conspan LA Software Training Course, (Prestressed Concrete Design Software), Leap

Software Academy, July 2001

## Publications/Presentations

“Communication Utilizing Computer Video Animations to Describe and Highlight Key Forensic Aspects for Litigation Projects Is a Powerful and Insightful Technique”, **Mel A. Underwood, P.E., Steven J. Faupel, Johann E. Weekes**, American Society of Civil Engineers’ 2020 Structures Congress Technical Proceedings; Authored paper and prepared presentation on this topic for the 2020 Congress

“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’ 8<sup>th</sup> Congress on Forensic Engineering Technical Proceedings (11-2018); Authored paper and presented on topic at the 8<sup>th</sup> Congress in November of 2018

“Failures of Floor and Wall Tile Installations Occur Due to a Lack of Complying with the Governing Building Code Requirements by Many Professionals Involved in the Installation Process”, **Mel Underwood, P.E., Neil Cichy, P.E., and Edward Tuczak, P.E.**, Structural Engineering Institute's 2015 Structures Congress Technical Proceedings; Authored paper and presented on topic at 2015 Congress

“Florida’s 2011 Sinkhole Law Revisions Provide Needed Clarity”, **Mel Underwood, P.E., Neil Cichy, P.E., and Robert Granica, P.E.**, American Society of Civil Engineers’ 6<sup>th</sup> Congress on Forensic Engineering Technical Proceedings (11-2012); Authored paper and presented on topic at the 6<sup>th</sup> Congress in November of 2012

“Loose Mortar-Set Roof Tile Falsehood”, **Mel Underwood, P.E.**, Structural Engineering Institute’s 2011 Structures Congress Technical Proceedings; Authored paper and presented on topic at 2011 Congress

## **Building Codes Utilized Throughout Engineer Career**

Florida Building Code (FBC), Southern Standard Building Code (SBC), Uniform Building Code (UBC), International Building Code (IBC), American Concrete Institute (ACI) ACI 318 – Building Code Requirements for Reinforced Concrete, ACI 350 – Code Requirements for Environmental Engineering Concrete Structures, Various ASTM standards, American Institute of Steel Construction (AISC) Manual of Steel Construction, The Aluminum Association -Aluminum Design Manual - Specifications for the Design of Aluminum Structures, American Association of State Highway and Transportation Officials (AASHTO) Bridge Design Specifications and Standard Specifications for Highway Bridges, Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction, National Wood Flooring Association (NWFA) National Wood Flooring Guidelines, Tile Council of North America (TCNA) Handbook for Ceramic, Glass, and Stone Tile Installation, American Society of Civil Engineers (ASCE) ASCE 7 – Minimum Design Loads for Buildings and Other Structures, American Welding Society (AWS) – AWS D1.1 Structural Welding Code, Concrete Reinforcing Steel Institute (CRSI) Manual of Standard Practice, as well as many others.

## **Miscellaneous**

Florida Building Code Core Course