8491 NW 17th Street
Suite 102
Doral, FL 33126

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

maunderwood@engsys.com

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' 8th Congress on Forensic Engineering Technical Proceedings (11-2018); Authored paper and presented on topic at the 8th 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' 6th Congress on Forensic Engineering Technical Proceedings (11-2012); Authored paper and presented on topic at the 6th 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