

George W. Sanford, PE
Structural Engineer
President, Sanford Engineering
Columbia, SC

Building Codes and Standards
Building Damage Assessment
Building Envelope/Water Intrusion
Building Foundation Issues
Construction Defect Evaluation
Exterior Wall and Roofing Systems
Structural Design – Collapse/Failure Analysis

EDUCATION

1988 **Bachelor of Science in Mechanical Engineering - Magna Cum Laude**
North Carolina State University, Raleigh, North Carolina

EXPERIENCE

2021 to 2022 The Warren Group, Inc., Irmo, South Carolina. Senior Consulting Structural Engineer performing specialized consulting related to property loss and damages resulting from construction defects, storms, and other events.

Conduct technical investigations of construction defects, incidents or losses related to residential, commercial, industrial, and historic structures.

Determine cause of building envelope failures, water intrusion and excessive moisture.

Determine scope of loss and cost to repair damage caused by fire, water, and weather events.

Conduct building code and construction standard evaluations.

Inspect concrete systems with cracks, settlements, and failures in foundations, retaining walls, floor slabs, and other concrete installations.

Assess damage to residential and commercial roofs due to age, hail and windstorms, as well as installation defects.

Evaluate structural failures involving steel, masonry, and timber.

2020 to 2021 Richland District 2 Columbia, South Carolina. Math Teacher. PACE Program participant teaching Geometry, Algebra II, and Pre-Calculus at Ridge View High School.

2018 to 2019 Thomas & Hutton Engineering Company, Mount Pleasant, South Carolina. Structural Project Manager III. Provided structural engineering design and consulting services for marine industry and municipal clients in South Carolina and Georgia. Designed commercial docks, bulkheads, retaining walls, outfalls, and sanitary structures. Drafted and negotiated contracts for large commercial dock construction projects.

EXPERIENCE, Continued

- 2014 to 2018** Live Oak Consultants, LLC, North Charleston, South Carolina. Staff Structural Design Engineer. Provided structural engineering design and consulting services for industrial and commercial clients in the greater Charleston area. Worked with clients from the development of design through commissioning to ensure project/program scope, schedule, and budget goals were met. Representative projects include foundation and underground tunnel design for a 200,000+ SF aircraft paint hangar facility, structural steel and foundation design of a 17,000+ SF cleanroom facility and foundation design for a new asphalt manufacturing plant.
- 2003 to 2014** Sanford Engineering, P.C., Mount Pleasant, South Carolina. Principal and Chief Engineer. Led and directed all aspects of business operations. Diversified offerings including feasibility studies, structural design, and engineering consulting services. Delivered structural design engineering services for builders, architects, and developers in the residential and commercial construction industry. Served as Engineer-of-Record for hundreds of Charleston-area coastal construction projects. Maintained business operations despite challenging economic circumstances of 2008 and 2009.
- 2002 to 2003** Trico Engineering Consultants, Inc., North Charleston, South Carolina. Structural Engineer. Designed, analyzed, and managed structural engineering projects covering residential, commercial, industrial, institutional, and municipal facilities. Served as Engineer-of-Record for a wide range of construction projects.
- 1998 to 2002** Container Products Corporation (CPC), Wilmington, North Carolina. Engineering Department Manager. Responsible for all Engineering functions for a manufacturing firm engaged in the design, fabrication, and certification of nuclear specialty shipping and storage containers, decontamination systems, and pressure vessels. Managed Engineers and Drafters, planned and allocated resources, maintained budget, and directed all design, analysis, and cost estimating efforts. Led strategic business planning efforts concerning manufacturing facility expansions and introduction of new product offerings.

EXPERIENCE, Continued

- 1990 to 1998** Westinghouse Electric Corporation. Power Generation Business Unit Turbine-Generator Plant, Charlotte, North Carolina. Senior Design Engineer/Engineering Project Manager. Drove new product development, custom applications, and performance and verification testing activities as Lead Product Design Engineer focused on large steam and combustion turbine-generator rotors. Identified opportunities to reduce costs and incorporate design improvements. Coordinated personnel, workflow, scheduling, budgeting, and cost estimating for generator refurbishment and modernization projects, as well as new product line development and manufacturing of prototypes. Engineered and designed streamlined and cost-efficient standardized product lines. Increased efficiency with focus on design for manufacturability. Reduced costs for material and labor, optimized product performance, and cut product time-to-market. Co-invented patented technique (US Patent # 5,517,862) measuring ventilation cooling flows exiting spinning generator rotors. Earned recognition with George Westinghouse Corporate Innovation Award.
- 1988 to 1990** Westinghouse Electric Corporation. Engineering/Manufacturing Professional Development Program. An 18-month rotational training program with four work assignments at two different manufacturing facilities, Cheswick, Pennsylvania and Hampton, South Carolina.

PROFESSIONAL ORGANIZATIONS

American Concrete Institute (ACI)
 American Institute of Steel Construction (AISC)
 American Society of Civil Engineers (ASCE)
 American Society of Mechanical Engineers (ASME)
 Concrete Reinforcing Steel Institute (CRSI)
 International Code Council (ICC)
 Structural Engineering Institute (SEI)

REGISTRATIONS

Professional Engineer in South Carolina (#22084)
 Professional Engineer in North Carolina (#20222)
 Professional Engineer in Georgia (#44065)
 Professional Engineer in Florida (#92240)
 Professional Engineer in Illinois (#062.073552)

CERTIFICATIONS

Certified Mobile Elevated Work Platform (MEWPs) Operator

FAA Commercial Remote Pilot Certification for Small Unmanned Aircraft Systems (Drones)

CONTINUING EDUCATION

February 10, 2022

“SEI Standards Series – ASCE 7-22 Overview and Changes,” a webinar presented by ASCE online, Columbia, South Carolina

January 12, 2022

“Training in accordance with CFR Sections 107.61 & 107.73 for FAA Unmanned Aircraft General Knowledge Test,” presented by Remotepilot101.com, Columbia, South Carolina

September 15, 2021

“Durable Repair of Corroding Structures,” a webinar presented by American Concrete Institute online, Columbia, South Carolina

August 18, 2021

“Residential Roof Construction and Damage – Wind and Hail Damage Evaluation” a webinar presented by the Charleston Area Claims Association, Columbia, South Carolina

August 18, 2021

“Industry Experience on Unusual Reinforcing Steel Corrosion” presented by American Concrete Institute online, Columbia, South Carolina

July 29, 2021

“Calculating and Applying Design Wind Loads on Buildings Using the Envelope Procedure of ASCE 7-10,” a webinar presented by ASCE, Columbia, South Carolina

July 29, 2021

“Engineering Judgement: Low-Rise Design and Detailing,” a webinar presented by ASCE, Columbia, South Carolina

July 28, 2021

“Engineering Mid-Rise Buildings of Wood Construction” presented by ASCE, Columbia, South Carolina

July 27, 2021

“Design of Wood Beams and Joists” presented by ASCE, Columbia, South Carolina

July 26, 2021

“Glued Laminated and Cross Laminated Timbers” presented by ASCE, Columbia, South Carolina

CONTINUING EDUCATION, Continued

July 26, 2021

“Connection Solutions for Wood Framed Structures” presented by ASCE, Columbia, South Carolina

July 23, 2021

“Flood Design for a Changing Climate” presented by ASCE, Columbia, South Carolina

July 22, 2021

“A Rational Approach to Structural and Seismic Issues Related to Historic Buildings” presented by ASCE, Columbia, South Carolina

July 20, 2021

“Fall Protection Training” a live training presented by Steven Hunt of The Warren Group, Irmo, South Carolina

July 16, 2021

“Engineering Investigations of Hurricane Damage: Wind Versus Water” presented by ASCE, Columbia, South Carolina

July 8, 2021

“Mobile Elevated Work Platform (MEWPs) Operator Training” presented by Sunbelt Rentals online classroom training, Columbia, South Carolina

June 28, 2021

“2015 Special Design Provisions for Wind and Seismic (SDPWS) – Overview and Changes from Previous Editions,” a webinar presented by ASCE

June 16, 2021

“Mobile Elevated Work Platform (MEWPs) Training – Scissor & Boom Lifts” a hand-on training presented by John Partain of Sunbelt Rentals, Columbia, South Carolina

June 10, 2021

“Roof Failures/Collapses,” a live presentation presented by Southern Loss Association, Atlanta, Georgia

March 4, 2021

“Hydrostatics and Hydrodynamics,” an online live webinar presented by SEM-Train, Columbia, South Carolina

May 15, 2020

“Thermodynamics,” an online live webinar presented by SEM-Train, Columbia, South Carolina

CONTINUING EDUCATION, Continued

December 18, 2019

“Electrical Engineering Principles for Non-Electrical Engineers” presented by SEM-Train, Columbia, South Carolina

September 11, 2019

“Thermodynamics & HVAC” an online webinar presented by SemTrain, Columbia, South Carolina

July 15, 2018

“Helical Pile Applications” presented by Chance Foundation Solutions, Charleston, South Carolina

February 12, 2017

“Retaining Wall Design and Slope Stability Techniques” presented by HalfMoon Education Inc., Columbia, South Carolina

June 2, 2017

“Solar Panel Applications” presented by HalfMoon Education Inc., Columbia, South Carolina

December 28, 2016

“Engineering Lumber Design,” an online webinar presented by TrusJoist, Charleston, South Carolina

October 20, 2016

“Wood-framed Diaphragms” presented by HalfMoon Education Inc., Charleston, South Carolina

September 7, 2015

“Structural Renovation of Buildings” presented by ASCE, Columbia South Carolina

February 26, 2015

“Steel Connection Design” presented by AISC, Charlotte, North Carolina

April 14, 2014

“Seismic Braced Frames” presented by AISC, Charlotte, North Carolina

May 2, 2013

“Seismic Design Manual,” an online live webinar presented by AISC, Charlotte, North Carolina

November 17, 2013

“Facade Attachments for Structural Steel Buildings” presented by AISC, Raleigh, North Carolina

August 4-6, 2012

“Design of Foundations for Dynamic Loads” presented by ASCE, Charleston, South Carolina

March 6, 2011

“Structural Loads” presented by ICC, Charleston, South Carolina

COURSES, SEMINARS AND LECTURES PRESENTED

One-hour webinar, approved by the North Carolina Department of Insurance, Continuing Education Agency Services Division, entitled "Issues with Breaching the Building Envelope"

October 5, 2021

PUBLICATIONS

"Verifying Ventilation Flows" co-authored with Walter R. Laster, Mechanical Engineering Magazine, 10/196, Vol. 118, No. 10, pp. 92-93, October 1, 1996

PATENTS

"Apparatus and Method for Measuring Ventilation Flow Exiting a Spinning Rotor" U.S. Patent #5,517,862, February 6, 1995, with David B. Berrong, Walter R. Laster, R. Michael Roidt, Richard A. Evans and Roy E. Wootton