

BRIAN FREDERICK, E.I.

EDUCATION

University of South Florida - B.S.C.E. - Bachelor of Science, Civil Engineering (Structures Emphasis)

Florida State Registered Engineering Intern - EI 1100015397

PROFESSIONAL AFFILIATIONS

Florida Structural Engineers Association – Member

American Society of Civil Engineers – Member

American Institute of Steel Construction – Member

CAREER HISTORY

Forcon International – Brandon, FL – Structural Consultant - Forensic structural engineering evaluations for commercial and residential buildings associated with structural failures, construction defects, property damage, moisture intrusion, building code compliance, and other issues related to structures.

ORB Engineering, Inc. – Lakeland, FL - Project Manager
Management and coordination of design projects in the Industrial, commercial and residential markets; Completed over 300 Investigations for various insurance agencies, contractors, owners in the state of Florida, Georgia and North Carolina.

Madrid Engineering Group, Inc. - Bartow, FL - Project Manager

- Completed over 200 Subsidence Investigations for various insurance agencies in the state of Florida.
- Completed over 150 Structure Condition Assessments for various insurance agencies in the state of Florida as required by Florida Statute 627.706(2)(K).
- Completed over 50 Structural Forensic Cause and Origin Investigations for various insurance agencies in the state of Florida.
- Foundation stabilization design for existing residential structures.
- Deep foundation design for new residential and special use structures.
- Structural repair of residential structures from impact, fire, and settlement related damages.

ORB Engineering, Inc. - Lakeland, FL - Project Engineer

- Design of steel, concrete, masonry and wood structures for residential, educational, and commercial projects.
- Prepared threshold inspection reports and threshold inspection plans.
- Performed field threshold inspections for several multi-story hotels.

- Performed field inspection at project start to determine project scope and field inspections during construction to verify document drawings compliance.
- Worked directly with all firm principals (engineer and architect).
- Created computer generated architectural renderings and animated walkthroughs.
- Met with plan reviewers of several building jurisdictions for pre-application meetings and responded to questions and comments related to permitting.

ORB Engineering, Inc. - Lakeland, FL – Business Manager

- Prepared bid packages for public projects including supporting documentation.
- Attended community networking events, including Chamber of Commerce Functions.
- Prepared and orated company presentations.
- Processed weekly payroll for up to ten employees.
- Prepare and process all monthly, quarterly and yearly returns for payroll tax, unemployment tax and business tax.
- Responsible for company books including accounts receivable and accounts payable
- Procured and managed insurance coverage for health, professional liability, general liability, workers compensation, and automobile.
- Handled all aspects of IT for company including company server, email server, web hosting and website design and website.

REPRESENTATIVE PROJECTS

Threshold Inspections

Served as authorized representative to the Special Inspector (S.I.) for more than fifteen (15) multistory and high-occupancy buildings throughout the State of Florida per F.S. 553.71. Duties and responsibilities included performing field inspections, prepare weekly/monthly summary reports for Chief Building Official, and review and preparation of Threshold Inspection Plans.

Sample projects include the following:

- Joker Marchant Stadium Renovation and Expansion, Lakeland, FL – Four (4) story steel clubhouse structure and steel frame and pre-cast concrete stadium structure. These facilities are part of the Spring Training home of the Detroit Tigers and the home of the Lakeland Flying Tigers baseball teams.
- Country Inn and Suites, Pinellas Park, FL – 4 story, 45,000 sq. ft. with CMU walls and concrete hollow core floors and roof.
- Holiday Inn Express, Davenport, FL – 5 story, 40,000 sq. ft. with CMU walls and concrete hollow core floors and roof.
- First Assembly of God, Wauchula, FL – 2 story, 14,000 sq. ft. steel frame building.
- Country Inn and Suites, Tampa, FL – 4 story, 35,000 sq. ft. with CMU walls and concrete hollow core floors and roof.
- Spring Hill Suites, Tampa, FL – 4 story, 74,000 sq. ft. with cast-in-place concrete walls and floors.
- Country Inn and Suites, Lakeland, FL – 5 story, 38,000 sq. ft. with cast-in-place concrete walls and floors.
- Word Alive Ministries, Lakeland, FL – 2 story, 12,000 sq. ft. steel frame building with mezzanine.

Structural Condition Assessments/ Subsidence (Sinkhole) Investigations

Served as Project Manager in the completion of over 350 structural conditions assessments/subsidence investigations for several insurance agencies in the state of Florida per F.S. 627.706. Typical duties involve performing an initial structural evaluation of the building and assessing structural load bearing components and building envelope. Other duties included: Reviewing field geotechnical and geophysical data to prepare boring location plans, interpretation/evaluation of boring and soil laboratory information, compilation and evaluation of observations and test results, floor elevation studies, and report preparation. Several projects required preparation of a structural remediation plan and drawings including low-mobility grouting, high density polyurethane, and foundation underpins.

Structural Forensic/ Cause and Origin/ Construction Defect/ Warranty Investigations

Served as Project Manager in the completion of over 20 cause and origin investigations for various insurance agencies, property owners, warranty companies, and contractors throughout Florida and Georgia. These investigations typically involve the evaluation of one or more elements of the structural system and building envelope. Typical duties involve performing site evaluation, an interview with the homeowner/building owner, building code research, and material specification research. Condition specific evaluations have included moisture testing, use of bore scope, thermal imaging, ground penetrating radar, and testing for steel reinforcement in concrete and masonry walls. Typical origin of observed conditions consisted of installation deficiencies, manufacturer defect, and environmental factors.

Multi-Story Residential Structure Investigation and Repair Drawings (Tampa, FL)

Served as Project Manager for the structural and geotechnical evaluation and assessment of a structural failure in progress at a four (4) story condominium structure in Tampa, FL. The project included cracking damage to one (1) post tensioned concrete beam and three (3) concrete columns of the building's first floor structure. Responsibilities included site evaluation, floor elevation study, planning and oversight of geotechnical drilling, coordination of structural analysis with post-tensioning sub-consultant, and presentations of findings and repair recommendations to the Condominiums Owner's Association Board of Directors. This project was nominated for the ASCE/FES Ridge Branch project of the year award in 2013.

Private Residence Limited Structural Investigation and Repair Drawings (Lakeland, FL)

This project consisted of a structural evaluation of the rear portion of the house. Due to the slope of the property, the rear Concrete Masonry Unit (CMU) wall of this one-story structure was nineteen (19) feet in height. This wall retains approximately nine (9) feet of compacted backfill below the interior floor slab. The homeowners reported settlement of the floor slab at the rear of the house. During the course of the investigation, it was revealed that the floor slab was not constructed integral (keyed into) the CMU wall as was indicated in the permit drawings. As such, the wall was left unbraced and moved from the lateral forces of the backfill. Other deficiencies encountered during the investigation included inadequate lateral reinforcement in the CMU wall. Repair of this structure included a series of helical tiebacks and spreader beams to temporarily brace the wall and restore a plumb condition. At the interior, a portion of the rear slab was removed to accommodate installation of a concrete support beam attached along the rear wall.

This would address the lateral reinforcement issued and allow the new slab to be poured integral and re-establish proper lateral bracing.

Commercial Building Foundation Stabilization and Roof Framing Repair (Oviedo, FL)

This project consisted of foundation stabilization and roof framing repair based on the results of a subsidence investigation completed at the property by Mr. Frederick. Due to the presence of highly organic soils below the building and nearby de-watering, a total of 15.5 inches of settlement occurred near the southeast corner of the structure. Mr. Frederick was responsible for the design and layout of the foundation stabilization and re-leveling plan in addition to localized roof framing repair. The plans included a total of 52 exterior helical auger pins and 41 interior/exterior slab helical auger pins.

Industrial Building Machine Foundation Stabilization Drawings (Auburndale, FL)

The project consisted of a foundation design for heavy corrugating machinery. Field conditions revealed that the existing concrete spread footings for the machines were settling due to the presence of loose sands. Settlement more than 1/16-inch forced the machinery to shut-down and be re-leveled. This created a large expense for the owner. The new foundations consisted of traditionally reinforced cast-in-place concrete pile caps on helical auger piles. There was a total of 15 separate foundations on a total of 344 helical auger piles. This project also required the demolition and installation of a new concrete slab on grade. Several considerations were taken in the design of the new slab as it relates to the type of machinery traffic within the warehouse. Mr. Frederick served as the project engineer responsible for the design and layout of the foundations and slab in addition to the preparation of plans for construction. Additional foundations utilizing similar design were completed for this client as needed.

County Park and Natural Resources Seawall, Retaining Wall, and Sidewalk Repair Design (Port Hatchineha, Haines City, FL)

This project consisted of the assessment, evaluation, and repair of a failing five hundred (500) foot long seawall located adjacent to Lake Hatchineha in Haines City, FL. Mr. Frederick served as project engineer for the assessment and for the design of the seawall, retaining wall, and sidewalk repair. Over time, soils that have washed through weep holes at the base of the seawall have created unstable conditions including void areas under the adjacent sidewalk and retaining wall. The design consisted of a new steel sheet-pile seawall installed at the water-side of the failing seawall and an elimination of the existing retaining wall. Mr. Frederick was responsible for the design and layout of the repair in addition to the preparation of plans for construction.

Private Residence Inspection and Repair (Sea Island, GA)

This project consisted of the on-going inspection of renovations performed at the project residence. Mr. Frederick served as Project Manager and Field Inspector for the repair activities. Total renovation budget was \$5,000,000.00. Initial site reconnaissance revealed moisture infiltration issues (by others) at the site. Mr. Frederick was brought into the project to evaluate hurricane strapping conditions at the structure. Over the course of the renovations, several other code related issues were encountered and Mr. Frederick coordinated the repair and corrective drawings for these issues. Additionally, the inspection responsibilities of the local Building Official were subrogated by ORB Engineering, Inc.