



## **John H. Stewart, P.E.**

### **Practice Area Leader, Structural Division**

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## **Background**

Mr. Stewart has over 35 years of consulting engineering experience and is a registered professional engineer in fifteen states. He earned his B.S. and M.S. degrees in Civil/Structural Engineering at the University of Minnesota and the University of Colorado. He also has an M.B.A. in International Finance from Georgia State University.

Mr. Stewart's extensive professional structural engineering experience includes design, analysis and construction administration of projects including nuclear power plants, airport facilities, mass transit stations, parking deck structures, pulp and paper mills, highway bridges, light industrial facilities, light commercial buildings, residential structures, retaining walls, and drainage structures. He has acted as the Engineer of Record for a diverse number of structural engineering projects ranging from green field design to investigation, evaluation, renovation and repair of damaged existing structural systems.

Mr. Stewart has also testified in court as an expert experienced in investigating and analyzing failures in civil and structural engineering disciplines related to residential, commercial, municipal, and industrial buildings. His experience includes investigating and repair of foundation failures, structural deficiencies, drainage problems, roof damage, storm damage, verifying construction compliance with applicable building codes, premise liability claims, slip and falls, and contract specifications.

## **Representative Design Projects**

### **Multi-Family**

- Apartment Building – Repair of an 8-story masonry wall and precast concrete core slab apartment building

that was damaged due to severe settlement problems. Project involved cutting two new expansion joints through all eight floors and reinforcing the masonry bearing walls with epoxy bonded steel straps to take the additional stresses from cutting of the expansion joints. Also provided temporary shoring design such that the majority of apartment building was kept operational during the two-year construction period. Estimated construction cost was \$3.0M.

- 12-Unit Apartment Building – DeKalb County, GA. Fire-damaged repairs of 7,500-sq-ft, two-story, wood-framed structure included half of the roof structure and half of the second floor units. In addition, two of the units were reconfigured to be handicap accessible.

### **Transportation**

- Aerial Mass Transit Station and Parking Deck – Atlanta, GA. \$25M elevated aerial structures included pre-cast concrete members and post-tensioned concrete members. The three level parking deck was a combination of pre-cast and cast-in-place concrete construction.
- Underground Mass Transit Station and Associated Subway Tunnel – Sandy Springs, GA. \$30M project that included cut and cover methods used to construct the reinforced concrete structures with rock-bolts added to resist overturning and uplift loads in the basemat.
- Aerial Bridge Bearing Pad Retrofit Project– Atlanta, GA. For mass transit authority, active bridge structures were lifted and the elastomeric bearing pads were changed out while keeping trains in operation.
- Long-Span Steel Pipe Bridges for a Paper Mill – Longview, OR. Design of 100-ft long by 12-ft wide by 10-ft high steel-tubed trusses that supported numerous large and small pipes over active roadways.

### **Municipal**

- \$2M Waste Water Treatment Plant – South Blue River, CO. Designed pre-cast concrete roof members and load bearing masonry walls for a 10-foot deep snow load.

### **Aviation**

- Concourse A Three-Story Expansion, Hartsfield International Airport – Atlanta, GA. \$30M three-story steel structure was located directly on top of the existing underground tunnel. The underground tunnel had to be reinforced with post-tensioned beams to support the additional loads of the new structure.
- Underground Vehicle Access Tunnel, Hartsfield International Airport – Atlanta, GA. The top slab of the 200-ft long, \$5M tunnel was subjected to a one-million pound aircraft load from a 747 aircraft traversing an active taxiway.

### **Commercial**

- Two-Story Precast Concrete Parking Deck – Doraville, GA. Design and construction defects of two-story parking deck required extensive repairs to spandrel beams and replacement of all bearing pads under double-tee floor slabs.
- Grocery Store – Oakland, CA. Designed masonry bearing wall and wood-framed roof for high earthquake forces of 22,500-sq-ft structure.

### **Industrial**

- Chrome Plating Facility – Fort Collins, CO. Designed open web steel bar joists and metal decking subject to high corrosive elements on a 25,000-sq-ft building.
- Steel Black Liquor Boiler Plant – Natchez, MS. Severe corrosion had degraded numerous steel columns and beams of six-story plant that required temporary shoring of the members and replacement or strengthening of the members.
- Elevated Conveyor System for Pulp Mill – Ketchikan, AK. Design of long-span steel trusses and towers of 500-ft system to handle heavy earthquake loadings and extreme temperature changes.
- Pre-engineered Metal Industrial Building Rebuild – Houston, TX. Interior of fire damaged 10,000-sq-ft

building included a 400-sq-ft office area and a 2,000-sq-ft hazardous materials storage area with 3-hour fire rated walls and doors. Existing undamaged foundations were re-used in the final rebuild. Estimated construction cost was \$1.0M.

### **Residential**

- High-end, Two-story Residence – Lyons, CO. Damaged by flooding, rebuilt 3,000-sq-ft, residence was designed for new FEMA flood resistant regulations and ASCE flood loads. Residence was located within the 100-year flood zone and the relatively high river flow velocity of 9.0 feet per second generated large debris impact forces on the foundations.

## **Education and Certifications**

- Civil Engineering, B.S.: University of Minnesota
- Civil Engineering, M.S.: University of Colorado
- International Finance, M.B.A.: Georgia State University
- Registered Professional Engineer: Georgia (17831), Florida (42970), Alabama (28117), South Carolina (33790), New York (093088), Colorado (23681), Tennessee (119468), North Carolina (044347), Kentucky (29705), Minnesota (54993), Utah (10474830-220), Kansas (25394), Wyoming (16353), Texas (1289503) and New Jersey (G054163).
- Memberships: American Society of Civil Engineers (ASCE)