



BC&E_{LLC}

Professional Qualifications

Loren D. Flick, P.E.

Senior Consultant

EDUCATION

Master of Science, Structural Engineering, Oklahoma State University, 1978

Bachelor of Science, Civil Engineering, Arizona State University, 1977

PROFESSIONAL REGISTRATIONS AND MEMBERSHIPS

Registered Professional Engineer in Colorado and Washington

Memberships: Structural Engineers Association of Colorado
Colorado Building Enclosure Council

PROFESSIONAL EXPERIENCE

2004 - Present: BC&E, LLC (formerly Building Consultants & Engineers, Inc.)
Co-Founder and Senior Principal

1988 - 2004: Wiss, Janney, Elstner Associates, Inc.,
Project manager and consulting engineer

1979 - 1988: Amoco Production Company and offshore engineering consulting firms
Offshore/arctic research engineer, project manager, and consulting engineer

Over a 40-year engineering career, Mr. Flick has consulted on thousands of projects nationwide involving the evaluation and repair of structural, foundation, building envelope, and construction materials problems.

Structural and foundation projects have included buildings and structures with unusual soil conditions and foundation movements; foundation vibrations; deteriorated parking garage and bridge structures; buildings damaged by natural disasters such as earthquakes, tornadoes, fire, wind, and flood; industrial concrete floor slab-on-grade problems; problems with large panelized wood roof systems; and load testing of concrete structures, window cleaning equipment, and rock anchors to verify their safety. While in the oil industry, Mr. Flick performed structural and geotechnical research, design, and evaluations on over 50 offshore platforms worldwide, and directed field investigations of soil conditions in the Beaufort Sea.

Mr. Flick has consulted on over 1000 projects involving building envelope technology. These include hundreds of exterior plazas, pavements, and below-grade portions of buildings suffering from leakage and deterioration; hundreds of building facades, windows, and curtain wall systems; snow-country roofing systems, cold roofs, and rooftop snow/ice management systems; and numerous exterior cladding systems. To develop ways to inspect many of these facades, in the 1990's Mr. Flick worked with a group of engineers and mountain climbers to develop roped-access and rappelling techniques to access hard-to-reach facades, including the domes on the state capital buildings in Nebraska, Kentucky, and Washington, the city hall buildings in San Francisco, Miami, and Milwaukee, and over 30 buildings for Columbia University in New York City.

Mr. Flick has consulted on and designed repairs for numerous construction materials problems including concrete distressed by alkali-silica reactivity; corrosion of aluminum walls and piping used in below-grade swimming pools; corrosion of aluminum flashings in window systems; glass breakage caused by nickel-sulfide inclusions; corrosion of reinforcing steel embedded in concrete; failure of stone, ceramic tile, and gypsum concrete flooring systems; the aging of PVC liners used in swimming pools; the deterioration of brick facades due to Sarabond mortar additive; and the deterioration of brick, stone, concrete, terra-cotta, wood, vinyl siding, hardboard siding, stucco, and EIFS façade materials; failure of joints in a large storm sewer using urethane resins; and a number of projects requiring repair or replacement of coating systems on various materials.

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