



editorial

Structural Licensure Promotes Public Safety

By Dr. W. Gene Corley,

Chair of SEI's Professional Activities Committee and member of SEI Board of Governors

Our founding fathers chose to delegate many powers to the states. Among these powers is the ability to license those professions and occupations that impact the health, safety and welfare of the public. Licensure of professional and structural engineers has been an evolutionary process.

As the North American frontier moved west in the 19th century, eastern transportation hubs grew at unprecedented rates. This created a need for more buildings. In Chicago, the "skyscraper" was invented to satisfy the need for office space in the downtown area. By the end of the 19th century, the combined effects of its devastating Great Fire and an enormous expansion of transportation and manufacturing in the City created one of the largest building booms ever experienced. Because of this building boom, Chicago became "the place to be" if you were a structural engineer or architect. Some of the world's most prominent design professionals, including Louis Sullivan and Frank Lloyd Wright, made their reputations at this time.

Along with the qualified design professionals of the time came a few incompetent and unscrupulous individuals. To protect the unwary public from such unqualified designers, the first license for design professionals was established with the Illinois Architecture Act of 1898.

Not long after the license for architects was established in Illinois, Wyoming established a PE license for Water Resource engineers in 1907. Next, Illinois enacted the first license law for Structural Engineers in 1915. This law was enacted primarily to regulate the life safety issues structural engineers face in the design of buildings and bridges.

All design professionals have some responsibility for the health, safety and welfare of the public. In many branches of engineering, however, comfort and economy are the most important products of their work. For example, if an air conditioner fails to work, the public may be uncomfortable, but lives are unlikely to be threatened. Similarly, if lighting is insufficient, the public may be inconvenienced but otherwise unharmed. For structural engineers, on the other hand, virtually everything we do is related to life safety. If a building, bridge, or other structure fails to stand up under loads applied, the resulting collapse can be life-threatening. Furthermore, buildings and bridges are very often one-of-a-kind, so the structural engineer must be right the first time.

Since Illinois' law took effect in 1915, ten more states have adopted some form of structural engineering license. Of all licensed engineers in North America, about one-third are licensed in the eleven jurisdictions with structural requirements.

Requirements are similar in the eleven states where structural licensure is available. In some states, the candidate must be licensed as a PE first. After gaining experience specifically related to structural design, and with education in structural engineering, the candidate is qualified to take an additional 16 hours of examination in design of structures. Upon passing the exams, the qualified person becomes a Licensed Structural Engineer. Meeting these additional requirements demonstrates a needed level of competency that differs from the minimum required in jurisdictions without structural licenses.

Is the knowledge required by structural licensure really needed? The ever-increasing complexity of building code requirements and the diminishing educational requirements to obtain a BS in engineering suggest the answer is "yes." Since the adoption of the International Building Code began in 2000, nearly all states now have substantial earthquake and wind requirements for structures. The design professional that lacks training and experience in structural engineering runs a significant risk of endangering the public.

Participants in two summit meetings and a workshop held over the last several years almost unanimously recommended separate licensure for Structural Engineers in the future. Members of SEI, NCSEA, and other structural organizations are currently working to implement these recommendations in jurisdictions that are interested. Although no one currently practicing structural engineering would be affected by this change, future design professionals who qualify will be better prepared to apply the more complex design requirements that will be used. As more jurisdictions adopt this approach, the public will be better protected. ■

EDITORIAL BOARD

Chairman

James DeStefano, P.E.
DeStefano Associates
Fairfield, CT
203-254-7131
chair@structuremag.org

Executive Editor

Jeanne M. Vogelzang
NCSEA
Chicago, IL
312-649-4600
ncsea@structuremag.org

Members

Craig E. Barnes, P.E., S.E.
CBI Consulting, Inc.
Boston, MA

David Biggs, P.E.
Ryan-Biggs Associates, P.C.
Troy, NY

Charles J. Carter, S.E., P.E.
American Institute of Steel Construction
Chicago, IL

Daniel Falconer
American Concrete Institute
Farmington Hills, MI

Richard Hess
Hess Engineering Inc.
Los Alamitos, CA

Brian J. Leshko, P.E.
HDR One Company
Pittsburg, PA

John A. Mercer, Jr., P.E.
Mercer Engineering, PC
Minot, ND

Evans Mountzouris, P.E.
The DiSalvo Ericson Group
Ridgefield, CT

Steven E. Schaefer, P.E.
Steven Schaefer Associates
Cincinnati, OH

Greg Schindler, P.E., S.E.
KPF Consulting Engineers
Seattle, WA

Stephen P. Schneider, Ph.D., P.E.
Kramer Gehlen & Associates, Inc.
Vancouver, WA

John "Buddy" Showalter, P.E.
AF & PA/American Wood Council
Washington, DC

Editorials are provided by the leadership and staff of the STRUCTURE Editorial Board, NCSEA, CASE and SEI on a rotational basis.

"...virtually everything we do is related to life safety."

"The design professional who lacks training & experience in structural engineering runs a significant risk of endangering the public."