2006 Walter P. Moore, Jr. Award

Lawrence G. Griffis, P.E.

The Walter P. Moore, Jr. Award was established in 1998 by the Structural Engineering Institute (SEI) of the American Society of Civil Engineers (ASCE) to honor Walter P. Moore, Jr. in recognition of his dedication to and technical expertise in the development of structural codes and standards.

The award is given annually to a structural engineer who has demonstrated technical expertise and dedication to the development of structural codes and standards. The contribution may have been in the form of papers, presentations, extensive practical experience, research, committee participation, or through other activities.

The award consists of a plaque presented at the annual SEI Structures Congress. The 2006 Walter P. Moore, Jr. Award was presented at the Structures Congress Award Luncheon to Lawrence (Larry) G. Griffis, P.E. in St. Louis, Missouri on May 19, 2006. The citation accompanying the award states, *"For his long and dedicated contributions to the development of state-of-the-art wind load provisions in structural engineering codes and standards."*

Mr. Griffis is a Senior Principal and President of the Structures Division of Walter P Moore. Larry received both his B.S. in Civil Engineering and his M.S. in Structural Engineering from the University of Texas, Austin in 1970 and 1971, respectively.

Larry Griffis is a member and leader in three major specification writing organizations:

- the American Institute of Steel Construction (AISC),
- the American Concrete Institute (ACI), and
- the Structural Engineering Institute (SEI) of the American Society of Civil Engineers (ASCE).

As a practicing structural engineer, his time commitment to these three organizations represents a major contribution that has resulted in significant benefits to the organizations and to the building industry as a whole. Larry is the only person who is a member of all three of these standards committees. Specifically, he contributed to each of the three major standards used in building design and construction in the United States:

- AISC 360 (*Specification for Structural Steel Buildings*),
- ACI 318 (*Building Code Requirements for Structural Concrete*), and
- ASCE 7 (*Minimum Design Loads forBuildings and Other Structures*)

As highlighted in the award citation, Larry Griffis has made significant contributions in the area of wind engineering. Through his work in design of large, complex, high-rise buildings and long-span roof structures using wind tunnel testing techniques, Larry has developed a long history of advancing the state-of-the-art of design for wind loads. This work led to his selection as chairman of the ASCE 7 Task Committee on Wind Loads. In addition, he has been responsible for upgrading the Wind Tunnel Method (Method 3 in the ASCE 7 Load Standard).

In addition, Mr. Griffis has been involved with composite design standards. He has pioneered the design of an innovative perimeter "tube" composite frame system in the Three Houston Center/Chevron Tower (a 52-story high-rise tower in downtown Houston, TX) that led to a long career in advancing the art of composite frame construction. This project received several engineering excellence awards and led to several noteworthy publications, textbooks, papers, and an AISC Design Guide on the subject. Collectively, they led to the 1994 T.R. Higgins Award from AISC for work in the field of composite construction. Larry continues to serve and provide leadership on the AISC composite design specification task committee. He is also the author of numerous other technical references, including AISC seminars, design guides, Engineering Journal papers, and other documents. His other previous awards include: American Association of Wind Engineering Practice Award, Engineering News Record — Newsmaker Award (1990, 2000), American Institute of Steel Construction — Lifetime Achievement Award (2002), University of Texas Distinguished Alumni Award (2002), and member of the National Academy of Engineering.

As the President of the Structures Division of Walter P Moore, Larry Griffis has been the designer of record for a large number of notable structures, including such landmark achievements as the Reliant Stadium in Houston, Texas and the Cardinals Stadium in Glendale, Arizona.

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Reliant Stadium (Photo by Russ Andorka)

Cardinals Stadium (Rendering courtesy of the Arizona Cardinals)

Walter P Moore provided structural engineering services for the award-winning Reliant Stadium, the nation's first retractable roof football stadium. The 368,060 square foot two-panel fabric-covered roof is supported on 10 trichord trusses. Upon opening, five trusses move north and five trusses move south atop huge super trusses. The super trusses were designed with a tapered cross section for both aesthetics and economy. To speed construction, the design accommodated erection in large but manageable pre-assembled panels. The translucent fabric skin allows ambient light into the stadium, enhancing the ability to grow a one-of-a-kind portable natural grass playing field. The design-build project was completed on schedule in August 2002. The stadium garnered Texas' top award for structural engineering excellence in 2002.

Walter P Moore is also the structural engineer for the 500,000 square foot retractable roof for the Arizona Cardinals Stadium. The roof design features two distinct elements: a fixed roof structure and two bi-parting retractable roof panels. The main roof was erected in a single lift. Two 87-foot deep super trusses span 700-feet between concrete super columns to form the primary structure of the roof, and two 180-foot long x 270-foot wide retractable roof panels bi-part from mid-field to expose the entire field to the Arizona sun. For economy and aesthetics, the super trusses were fabricated as lenticular trusses. An innovative erection process was used in which the super trusses and retractable roof panels will be assembled on the ground and jacked into place. Cardinals Stadium will feature two "firsts": the first retractable roof whose movement follows an arc along the top roof profile of the stadium, and the first stadium in the United States to feature a retractable natural grass field.▪