Election of two SEI members to the US National Academy of Engineering

James Robert Harris

James Robert Harris, president, J.R. Harris & Company Structural Engineers, Denver. For contributions to the development, improvement, and implementation of modern standards for the design of buildings. Dr. Harris is a new member of the SEI Board of Governors, representing CSAD. He is the most recent chair of ASCE 7.

R. Shankar Nair, senior vice president, Teng & Associates, Chicago. For contributions to the art and science of engineering through the design of innovative bridges and building structures. Dr. Nair is a long-standing SEI/ASCE member, serving on the Committee on Design of Steel Building Structures from 1986-2001, and as its chairman from 1993-1996.▪

R. Shankar Nair

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Journal of Bridge Engineering

November, 2005

Editor's Notes – Bruce Peterson

The November 2005 issue of the *Journal of Bridge Engineering* is currently available: the first three papers examine load issues in timber bridges, concrete box culverts, and concrete box-girder bridges respectively. The next two papers deal with the design and analysis of harp shaped single span cable-stayed bridges and integral abutment bridges. Two additional papers focus on curved box girder bridges, while the remaining six papers look at the use of composites for bridge structures. Three of these final six deal with the subject of bridge decks, while the fourth compares three soffit-mounted retrofit schemes of concrete bridge girders. The remaining papers are on composites, and the last two papers of the issue are companion pieces addressing bridge column studies. A discussion of Okeil, et. al.'s "Warping Stresses in Curved Box Girder Bridges: Case Study" completes the issue. For a more detailed discussion of these papers, please visit **www.seinstitute.org/publications/**▪

An Interview with R. Shankar Nair

Winner of the 2005 "Best of the Best"

Please join us in congratulating R. Shankar Nair, Ph.D., P.E., S.E. on his selection as the winner for the Best Presentation given at SEI's Structures Congress in New York City, April 20th-24th, 2005.

For the past three years, the Structural Engineering Institute of ASCE has held a vote for the best presentation at the annual Structures Congress. Each registrant receives a ballot with their conference material, on which they list the presentation they believe was the most informative and well-prepared of the Congress. Our 2005 winner, Dr. Nair, received $1,000 to defray expenses to attend the 2006 Congress in St. Louis, MO. His presentation, entitled *Stability and Analysis Provisions of the 2005 AISC Specifications for Steel Buildings*, received an overwhelming majority of the votes for best presentation at the 2005 Structures Congress.

Dr. Nair is a principal and senior vice president of Teng & Associates, Inc. in Chicago. He joined the firm in 1995 after serving as a principal with other architecture and engineering design firms in Chicago and Baltimore. He received his PhD from the University of Illinois at Urbana-Champaign in 1969 and is licensed to practice engineering in over 40 states. Dr. Nair's work with stability effects in tall structures evolved gradually over a career that has – thus far – spanned almost four decades.

Designing tall buildings in the 1970s, he found that there was no standard or generally-accepted method of accounting for overall lateral stability effects in such structures. Indeed, lateral stability effects were usually ignored in tall braced frame and shear wall structures. Desiring to correct this, he developed techniques for use in his own design practice. First he developed a general computer analysis technique, and a few years later a very simple method applicable to most tall buildings (1). A pattern of interest in stability emerged, as he developed his own methods for stability analysis of tied arch bridges in the early 1980s when he was designing the (then) longest tied arch bridge span in the world and, again, could not find the necessary tools in the existing literature (2).

After these and other experiences, as Dr. Nair says, "One thing led to another," and while he did not set out to become an expert on stability, in time he found himself chairman of the group that writes the provisions on stability in the AISC *Specification for Structural Steel Buildings*. It is in that role that he delivered the presentation at the 2005 SEI Structures Congress in New York City.

A self-taught speaker and presenter, Dr. Nair argues that there are two crucial elements to a good presentation: remembering that the presentation is for the audience (and not the speaker), and developing good graphics that are integral to the flow of the presentation's argument. As Nair explained, "A presentation at a conference is not like a thesis defense; it is not intended to show what you know and how much work you have done; rather, it is intended to give the audience useful or interesting information and, sometimes, to persuade them of a particular point of view." He adds, "It is not necessary (or, usually, desirable) to pour out everything you know about the subject. Anything intended only to show that you have done your homework should be jettisoned. Too much information is a far more common mistake than too little." In developing the visuals that are an integral part of a successful presentation, Dr. Nair's preference is to have a very large number of very simple pictures, each illustrating just one point or advancing the discussion just one small step. For his 25-minute presentation in New York he had 79 slides that he developed as he was developing his own thoughts for the presentation, so that both worked together seamlessly.

Dr. Nair considers himself first and foremost a designer. He feels fortunate to have been able to keep his professional focus on design throughout his career, with his research and technical publications growing out of this work. "My research," Nair says "was meant to address real problems that I had encountered in my projects." This approach and focus has proven very successful. Dr. Nair has designed both skyscraper structures and long-span bridges, and these designs have won numerous awards including four "Prize Bridge" awards from the American Institute of Steel Construction/National Steel Bridge Alliance and six "Most Innovative Structure" awards from the Structural Engineers Association of Illinois. Most recently he has been elected to the National Academy of Engineering.

In addition to his award-winning design career, Dr. Nair is an active professional volunteer, notably including the chairmanship of the Council on Tall Buildings and Urban Habitat. He is also an active writer, having penned almost 20 op-ed pieces for the Chicago Tribune over the past decade.▪

(1) "Overall Elastic Stability of Multistory Buildings," Journal of the Structural Division, ASCE, December 1975 and "A Simple Method of Overall Stability Analysis For Multistory Buildings," Developments in Tall Buildings—1983, Council on Tall Buildings and Urban Habitat.

(2) "Buckling and Vibration of Arches and Tied Arches," Journal of Structural Engineering, ASCE, June 1986.