



Bridge Sustainability, Part Two: Societal Issues

John S. Dick, *Executive Editor*

Photo: Ted Lacey Photography

In this issue of *ASPIRE*,™ we continue our year-long program to define sustainable issues in bridge design and construction. On page 16, Kevin Eisenbeis, a Principal with Harrington & Cortelou Inc., Kansas City, Missouri, outlines the “societal” aspects of sustainability: life safety, accelerated bridge construction, context sensitive designs, long service life, and aesthetics.

One life-safety issue impacting bridges is their fire resistance. Fire is an ever-present concern of all owner agencies. As more and more flammable materials are carried over the highway system, fires will continue to occur with increased frequency.

Accordingly, this issue contains two articles on fire that should be of interest to owners and designers alike. In the first, on page 18, we report on eight concrete bridge fire events that occurred in recent years. The bridges covered illustrate that even after exposure to fires of various intensities, concrete can remain in service, circumventing long-term closures or long-distance detours. The primary beneficiary of this concrete-bridge capability is the traveling public, who can continue to use these important arteries while owners consider alternatives for repair or replacement.

That raises a frequent question addressed by our second fire-resistance article, on page 24: How can fire-damaged concrete be evaluated? From the Pacific Northwest, the Washington State Department of Transportation (WSDOT) provides details of their investigation into a 3000 °F bridge inferno. Richard Stoddard, Bridge Design Engineer with the Bridges and Structures Office of WSDOT, offers important information about what they did when tragedy struck. Without precedent, they quickly established definitive analytical methods and determined that the bridge

could be reopened to traffic while more long-term solutions were sought. A more complete report on their work is available at www.aspirebridge.org/resources/. Additional photos are also available on the website following the article.

Further expanding on the sustainability theme, M. Myint Lwin, Director of the Office of Bridge Technology at the Federal Highway Administration, describes the FHWA “green” programs now underway (see page 54). FHWA is actively participating in the Green Highways Partnership, a voluntary public/private initiative.

Sustainable Bridge Design Awards

Also in the sustainable-bridge area are two award programs announced in this issue. The Precast/Prestressed Concrete Institute (PCI) is soliciting entries for its Bridge Design Awards program (see the notice on page 43). One category available to designers is the Sustainability Award. The purpose is to recognize the construction of responsible, innovative designs that are sensitive to the environment while meeting the needs of the public and the owner. Deadline for entries is May 23, 2008. Details are available on the PCI website (www.pci.org, select “News and Events”).

Also, the Portland Cement Association (PCA) has created the Sustainable Leadership Awards. PCA developed these awards to honor public officials who utilize concrete and other cement-based products in public works projects such as highways, streets, bridges, dams, pipe, or water systems that are energy efficient and beneficial to the community. Be sure to notify your colleagues about this opportunity for agency recognition. Deadline for entries is May 30, 2008. Details are available at www.cement.org/sustainableleadership/.

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See “*Protecting Against & Evaluating Fire Damage*” articles beginning on page 18 for additional credits.

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Long Span Bridge Landmark



Pennsylvania Turnpike Commission continues their capital plan with the replacement of the I-76 bridge at Oakmont, Pennsylvania, across the Allegheny River. Pennsylvania's first cast-in-place concrete segmental bridge was designed by FIGG and is being built by Walsh Group. Twin 2,350' long structures are being constructed from above to preserve and maintain vehicular, river and rail traffic below. Spans of 285'/380'/380'/444'/532'/329' cross the river and Fourteen Mile Island. The bridge is on schedule to open in 2010.

If you share our passion for creating bridge landmarks, join the FIGG Team. For an exciting career as a Bridge Design Engineer, CADD Designer, Construction Site Engineer or Inspector, please contact us at 1.800.358.FIGG (3444) or www.figgbridge.com.

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