



Grade for the Nation's Bridges: "C"

John S. Dick, *Executive Editor*

Photo: Ted Lacey Photography.

As *ASPIRE*[™] continues through its second year of exploring sustainable design, our PERSPECTIVE in this issue looks at the condition of the nation's bridges as evaluated by the American Society of Civil Engineers (ASCE). Author Andrew Herrmann of Hardesty & Hanover is chair of the Advisory Committee for the preparation of ASCE's 2009 Report Card for America's Infrastructure, which gives America's bridges a "C."

Although that grade may seem acceptable, it is the same rating bridges received in 2005, during ASCE's last evaluations. That means there has been no appreciable improvement. In fact, grades for "Roads" and "Transit" actually went down. Not surprisingly, ASCE suggests a commitment to increased funding must be made. They also propose a plan comprising five nationally-focused recommendations. Two of these are: 1) Promote sustainability and resilience and 2) Address life-cycle costs and ongoing maintenance. The details are included in the article beginning on page 14.

Sustainability, Resilience, Life-Cycle Costs, and Maintenance

State-of-the-art concrete bridges provide sustainable solutions. Recent issues of *ASPIRE* contain a PERSPECTIVE by an authority on sustainability. Plus, nearly every project report confirms our belief that modern concrete bridges help achieve this goal, with long-term durability, freedom from frequent maintenance cycles, rapid constructability, low environmental impact, and opportunity for aesthetic creativity.

This Issue of *ASPIRE*

Some unique capabilities of concrete are revealed in an article on the Bijou Street Bridge over Monument Creek in Colorado Springs, Colo. by Gregg Reese. By using post-tensioning to create four-span continuity, 60-in.-deep U-girders

combine with an 8-in.-thick deck to create a main span of 148 ft with girders spaced as much as 22.8 ft apart. The article begins on page 18.

An advantageous combination of concrete components—cast-in-place, double-cell box girder segments, precast I-girders with precast deck panels, and cast-in-place concrete in the substructure and deck—will provide long-term durability for the I-45 Galveston Causeway in Texas. The article starts on page 22.

Frederick Gottemoeller, in his Aesthetics Commentary on the Vancouver Land Bridge, in Washington, says, "There are no obvious dividing lines between bridge and ramp or between ramp and site." Indeed the project, a pedestrian bridge connecting important historic and geographic attractions over a busy six-lane state highway, has been described as a landscaped interpretive work of art. The story of this unique project begins on page 26.

The state of Louisiana Department of Transportation and Development has conducted more research on high-performance concrete than most other states. Faced with considerable environmental challenges, the state puts into practice what it has learned. Read about recent examples in the article on page 46.

In a somewhat similar way, Washington County, Ore., is replacing its more susceptible bridges with state-of-the-art concrete structures. Using high-performance concrete and techniques that provide for rapid construction, the county is ever mindful of environmental issues such as bat habitats. Read their story on page 51.

This issue of *ASPIRE* includes its special semiannual section, Maintenance, Repair, and Rehabilitation of Concrete Bridges. Beginning on page 39, this segment includes reports from across the country. If you have suggestions for future reports, please contact us through the *ASPIRE* website, www.aspirebridge.org.

Executive Editor: John S. Dick
Managing Technical Editor: Dr. Henry G. Russell
Managing Editor: Craig A. Shutt
Editorial Staff: Daniel C. Brown, Roy Diez
Editorial Administration: James O. Ahtes Inc.
Art Director: Mark Leader, Leader Graphic Design Inc.

Layout Design: Marcia Bending, Leader Graphic Design Inc.

Electronic Production: Chris Bakker, Jim Henson, Leader Graphic Design Inc.

Ad Sales: Jim Oestmann
 Phone: (847) 838-0500 • Cell: (847) 924-5497
 Fax: (847) 838-0555
joestmann@arlpub.com

Reprint Sales: Mark Leader
 (847) 564-5409
 e-mail: mark@leadergraphics.com

Publisher:
 Precast/Prestressed Concrete Institute,
 James G. Toscas, President

Editorial Advisory Board:
 Susan N. Lane, *Portland Cement Association (PCA)*
 John S. Dick, *Precast/Prestressed Concrete Institute (PCI)*
 William R. Cox, *American Segmental Bridge Institute (ASBI)*
 David McDonald, *Epoxy Interest Group (EIG)*
 Dr. Henry G. Russell, *Managing Technical Editor*

POSTMASTER: Send address changes to *ASPIRE*, 209 W. Jackson Blvd., Suite 500, Chicago, IL 60606. Standard postage paid at Chicago, IL, and additional mailing offices.

ASPIRE (Vol. 3, No. 3), ISSN 1935-2093 is published quarterly by the Precast/Prestressed Concrete Institute, 209 W. Jackson Blvd., Suite 500, Chicago, IL 60606.

Copyright 2009, Precast/Prestressed Concrete Institute.

If you have a project to be considered for *ASPIRE*, send information to *ASPIRE*, 209 W. Jackson Blvd., Suite 500, Chicago, IL 60606
 phone: (312) 786-0300
www.aspirebridge.org
 e-mail: info@aspirebridge.org

Cover:
 Rigolets Pass Bridge, Slidell, La.
 Photo: Louisiana DOTD.



Log on NOW at
www.aspirebridge.org
 and take the *ASPIRE* Reader Survey.



Modern Bridges for the Future

SUSTAINABLE SOLUTIONS INTEGRATED WITH THEIR SURROUNDINGS

CLOCKWISE FROM TOP

“A Bridge in Harmony with the Environment” blends into its landscape with shapes, colors and textures born of the earth. This concrete segmental bridge was designed with respect for the environment – preserving, blending and connecting the beautiful landscape. *US 191 Colorado River Bridge, Moab, Utah for Utah Department of Transportation*

“Arches - Water - Reflection” combines sustainable eco-design with elegant simplicity and innovation. Environment friendly concrete frames the great Mississippi River with a modern interstate bridge for the future. A 504’ main span crosses over

the river. First use of LED’s for major highway lighting. *The New I-35W Bridge, Minneapolis, Minnesota for Minnesota Department of Transportation*

“A Garden Parkway Experience” with a sculptural, elevated roadway that is planned for five miles of US 280. Single, open piers in the median carry out the “Tribute to Nature: Trees and Native Stone” theme selected by the community. The bridge will carry two directional traffic. *US 280 Elevated Roadway, Birmingham, Alabama for Alabama Department of Transportation*

1.800.358.3444



www.figgbridge.com

CREATING BRIDGES AS ART®