



Forging a New Generation of Sustainable Bridges

John S. Dick, *Executive Editor*

Photo: Ted Lacey Photography.

With this issue, *ASPIRE*TM begins its third year of delivering information on outstanding bridges, imaginative solutions, and solid, useful techniques for the bridge design and construction community. We appreciate your encouragement and support and we certainly welcome your comments and suggestions.

Sustainability to Remain Focus

Sustainable bridge design will again be our focus in 2009. We introduced and explored it in 2008 and it became the obvious choice for 2009. We discovered that nearly every featured bridge last year had sustainability considerations woven into its design. It became clear that concrete bridges are truly the sustainable solution for our nation's bridges. Every attribute we ascribe to concrete bridges meshes with principles of sustainability. So, we will continue to report your accomplishments in building sustainable concrete bridges and will emphasize those aspects whenever techniques stand out.

Challenges Prevail

As we go to press, the state of the nation's economy is on every mind. In transportation, long-term funding solutions are likely to be a high priority in 2009. Solutions and various economic stimulus ideas have become the topics du jour.

On page 14, John Horsley, executive director of the American Association of State Highway and Transportation Officials offers this observation in his "Perspective: Sustainable Bridges and the Value of Innovation:" "...we have a wealth of talent and techniques to forge a new generation of sustainable bridges that promise greater strength, safety, service, sensitivity, savings, and stability for all who use them. What we lack, however, is a more vigorous national commitment to

investment for those structures and other key transportation priorities." We hope that 2009 will see the necessary commitments to transportation infrastructure made by all levels of government.

Project Features

This issue's project reports include three highway bridges, a pedestrian bridge, and a major airport taxiway bridge. Included in the mix is the longest span concrete box girder bridge in the United States, the Kanawha River Bridge, on page 30. A unique pedestrian bridge in Washington State incorporates numerous aesthetic features and required construction over busy I-405 (see page 26). The Port Columbus Taxiway Bridge is designed for Group V aircraft loading while achieving a slender and attractive solution (see page 34). As you can see, there are many applications for concrete bridges.

Industry Advisory

The Safety and Serviceability feature in this issue is an advisory developed by the Precast/Prestressed Concrete Institute (PCI). After experiencing a number of situations involving "sweep" of long slender girders, the industry identified circumstances that could lead to undesirable performance. This discussion begins on page 38.

New Special Section

On page 41, *ASPIRE* begins a new regular feature we call Maintenance, Repair, and Rehabilitation of Concrete Bridges. Until now, we have not explored these subjects, but believe they are critical issues enabling bridge owners and designers to strengthen and prolong their concrete bridge inventories. We look forward to your comments and especially ask for your ideas about projects that deserve recognition. *Let us know!*

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) 577-0129

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)*

Clifford L. Freyermuth, *American Segmental Bridge Institute (ASBI)*

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. 1), 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:

Canyon Park Freeway Station Bridge,
Bothell, Wash.

Photo: Washington State Department of
Transportation.



Precast/Prestressed
Concrete Institute



American Segmental
Bridge Institute



Portland Cement
Association



American Coal Ash
Association



Expanded Shale Clay
and Slate Institute

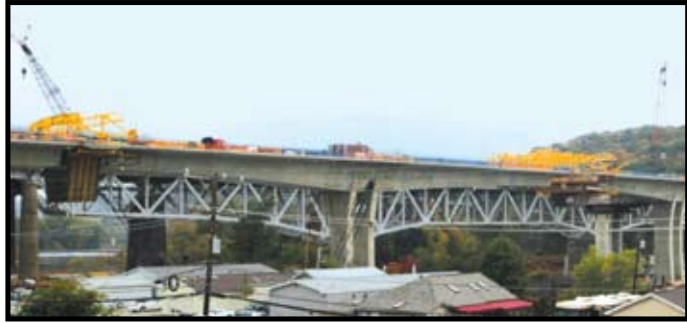


Silica Fume
Association

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



Concrete segmental cantilevers meet to form one of the 380' spans



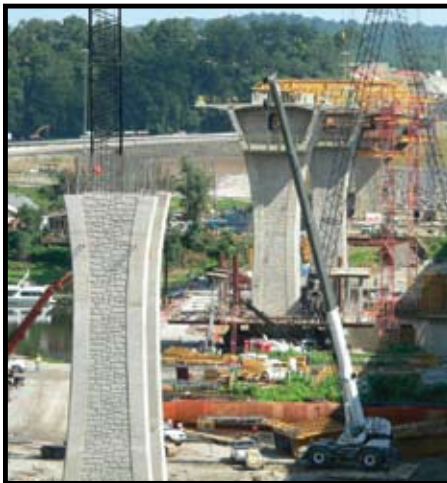
Span 2 at 380' (left) is within 4' of closure. 5 segments remain to complete Span 3, also at 380' (right)

Allegheny River Bridge | Pittsburgh, PA

Twin 2,350' concrete segmental bridges create an environmentally friendly structure across the Allegheny River and Fourteen Mile Island, part of the Allegheny Island State Park. Span lengths are 285', 380', 380', 444', 532', and 329'. Construction is scheduled for completion in April 2010.

LONG SPAN SEGMENTAL CONCRETE BRIDGE

for the Pennsylvania Turnpike Commission



90' to 100' tall twin wall piers incorporate stone texture to complement nearby Oakmont Country Club

Bridge Designer: FIGG

Contractor: Walsh Construction Company

Join the firm designing bridge landmarks. If you are looking for an exciting career creating bridges as art®, please contact us at 1.800.358.FIGG (3444).

An Equal Opportunity Employer

CREATING BRIDGES AS ART®
www.figgbridge.com



Rendering of new bridge