



Innovation

John S. Dick, *Executive Editor*

Photo: Ted Lacey Photography.

Innovation is a word we use a lot these days. It describes the result of creativity... of originality... of "thinking out of the box." We shouldn't be surprised; there's a lot of it occurring in the realm of bridge engineering design and construction.

*ASPIRE*TM magazine was created to share this technology. The dictionary defines aspire as demonstrating "a strong desire for high achievement," to "strive toward an end," to "soar." That definition aptly describes both the ambition of a bridge designer and the objective of this magazine; the ambition to innovate. You'll find it is prevalent in this issue.

Begin with the Wilson Street Bridge article that starts on page 16. This truly elegant design, made possible by post-tensioned, high-performance concrete, shines as the centerpiece of a picturesque river community.

Bridge designers haven't been content with the traditional geometrics of intersection design. This issue reports on two firms at opposite ends of the country that faced challenging constraints and created unique designs. The Keystone Parkway set of interchanges in Indiana, relies on a "double teardrop roundabout" that requires a minimum footprint in the redesign of a busy corridor (see pages 24-26). In Oregon, the South Medford Interchange on I-5 is an example of a well-designed single-point urban interchange (SPUI). SPUIs aren't brand new, but they demonstrate the informed application of a new generation of interchange designs that simplify traffic patterns and reduce driver travel time. This project resulted in 11 bridges requiring 235 concrete girders and 24 precast concrete slabs. The article begins on page 36.

A pedestrian bridge intersecting with I-5 in California, combines the best attributes of concrete with an innovative design. Economics was the winner when a unique deck section was joined with bar stays supported by an "A-shaped" concrete tower. This article begins on page 28.

Accelerated bridge construction (ABC), which satisfies demands by the traveling public to reduce

congestion, has been driving creativity and will continue to do so for some time. Many owner agencies are meeting the challenge. The Minnesota Department of Transportation (Mn/DOT) was featured in the Summer 2010 *ASPIRE*. This issue reveals how its state aid bridge office teamed with the FHWA Division bridge office to organize "scanning tours" of other states. Their goal was to develop means and methods for ABC solutions on secondary roads in Minnesota. See pages 50-51.

The Utah Department of Transportation has also embraced ABC methods. *ASPIRE*'s featured state highlights just four of many new bridges using innovative concepts to expedite construction. The Utah feature begins on page 44.

Summit Engineering Group and the Colorado Department of Transportation (CDOT) have gone where none had gone before. Beginning with a project in 1995, CDOT developed concepts for and used curved precast, prestressed concrete trapezoidal box beams on projects in the Denver region. Later, Summit Engineering, together with the precast concrete industry in Denver, took these concepts into the precasting plant. Innovative details and construction methods resulted. Curved precast concrete bridges are common now in eastern Colorado. States in the southeast and Pacific Northwest are beginning to look into similar solutions. Read the FOCUS feature beginning on page 8 for more details.

The Federal Highway Administration fosters innovation through its Highways for LIFE program. In the first of two articles starting on page 42, FHWA discusses how the program operates to identify and share "high-payoff innovations."

And there's more inside. Enjoy—and benefit from these articles from innovators, like you, who are creating new generations of structures across the country. Let us hear about your projects, too. Go to www.aspirebridge.org and select "Contact Us."

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Send address changes to *ASPIRE*

200 W. Adams St., Suite 2100

Chicago, IL 60606.

Standard postage paid at Chicago, IL, and additional mailing offices.

ASPIRE (Vol. 4, No. 4),

ISSN 1935-2093 is published quarterly

by the Precast/Prestressed Concrete Institute

200 W. Adams St., Suite 2100

Chicago, IL 60606.

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Cover

Ramp A Flyover Bridge, Wheatridge, Colo.

Photo: Jenna Marie Kusmierek



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