



Bridge Sustainability, Part Four: Environmental Considerations

John S. Dick, *Executive Editor*

Photo: Ted Lacey Photography

This issue of *ASPIRE*[™] concludes our year-long effort to define sustainable issues in bridge design and construction. On page 16, Cory Imhoff and David M. Taylor of HDR Inc. discuss the “environmental” aspects of sustainable concrete bridges. In just the small space available, they present an encouraging view of the material’s accomplishments, the improvements in recent years, and a bright outlook. This compelling narrative is augmented with examples from recent projects.

Further reinforcing the recyclability of concrete, on page 20, Geoff Crook of the Oregon Department of Transportation describes his state’s dramatic process of putting old concrete to new uses. The article showcases for other agencies how to effectively plan for the economical reuse of concrete structures.

This issue’s featured design consultant is URS. Rooted in the past with visions to the future, URS sees opportunities in design-build, research, and new technologies. Sustainability and creativity are surfacing in client discussions from the beginning.

Colorado is our featured state. While they have been relying on concrete structures for more than 40 years, most applications were simple bridges with shorter spans. Exceptions began when the unique and exciting segmental bridges were constructed on I-70 in Glenwood Canyon and Vail Pass. Colorado has had standards for precast concrete trapezoidal box beams for some 15 years. More recently, they have produced innovations by extending spans

through splicing these sections and even using precast trapezoidal boxes with horizontal curves!

One of the most dramatic stories of concrete bridges in the U.S., the I-35W replacement bridges now in their final stages of construction in Minneapolis, begins on page 24. The bridges will certainly remain a standard-setting project for many years in the accounts of sustainable design and construction. The variety of challenges, including context sensitivity, speed of construction, aesthetic attributes, and durability, are skillfully described in articles by Jay Hietpas of the Minnesota Department of Transportation and by Linda Figg and Alan R. Phipps of FIGG.

The article by M. Myint Lwin of the Federal Highway Administration traces the genesis of the environmental protection movement by the federal government. On page 60, he recounts where it began, setting the stage for the environmental provisions of SAFETEA-LU, which will be reviewed in the next issue of *ASPIRE*.

Finally, environmental sensitivity couldn’t be better illustrated than through the project articles featured in this issue. The creative solution being used by Flatiron Constructors for the Washington Bypass in North Carolina (see page 40) greatly minimizes the disturbance of sensitive wetlands. Then, the innovative use of cast-in-place concrete solves a particularly difficult environmental challenge faced by Michael Baker Jr. engineers in Utah’s foothills (page 36).

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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. 2, No. 4), ISSN 1935-2093 is published quarterly by the Precast/Prestressed Concrete Institute, 209 W. Jackson Blvd., Suite 500, Chicago, IL 60606.

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Pomeroy-Mason Bridge,
Ohio to West Virginia
Photo: URS.

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