



## Concrete Bridge Preservation

John S. Dick, *Executive Editor*

Photo: Ted Lacey Photography.

In this issue of *ASPIRE*<sup>™</sup>, we introduce a new feature devoted to the preservation of concrete bridges. It begins on page 44.

*ASPIRE* features innovative design and construction projects that largely define the state of the art. In the area of preservation, we are seeing new methods, materials, and tools that are extending the useful lives of concrete bridges significantly. We will be highlighting examples, written by the practitioners, to help our readers become aware of the art and science of concrete bridge preservation.

The topic has many facets. Preservation begins in design with the selection of high-performance materials, the use of details that are durable and readily constructable, and the requirements for certified personnel, companies, and processes. These all lead to the creation of bridges considered sustainable and destined to outperform and outlive even optimistic expectations. Examples of how longevity is designed into projects can be found in most every featured project in *ASPIRE*. Highlighting sustainability continues to be our key objective.

The preservation of existing bridges extends to preventative maintenance, repair, and rehabilitation. In this issue, beginning on page 44, Paul Krauss, John Lawler, and Kimberly Steiner report on the results of a study conducted for the National Cooperative Highway Research Program to develop a methodology for selecting bridge deck treatments for different bridge deck conditions and deck materials. On page 47, Larry Olson and Yajai Tinkey report on new technology to assess the condition of concrete such as in decks and the detection of voids in post-tensioning ducts. They report on equipment now available to remotely measure the deflection of a structure during load tests.

The Louisiana Department of Transportation and Development (LADOTD) believes that an aggressive

and strong preventive maintenance program is needed to slow the deterioration of its bridges. And so, in 2006, LADOTD initiated the Bridge Preventive Maintenance Program to help extend bridge service lives. On page 46, Danny Tullier, program manager, explains the nature of the program and provides some examples.

In our county feature (see page 55), Thomas Menke and Peter Yauch of Pinellas County, Fla., describe the use of concrete for their bridges and introduce the Bridge/Asset Management and Preventative Maintenance programs designed to preserve their structures.

Craig Finley, in our FOCUS feature on FINLEY Engineering Group, beginning on page 8, concurs that, "...preservation work...is an exacting area that has a lot of potential, because there are new materials being used that will last much longer." One of those new materials is ultra-high-performance concrete (UHPC) that may end concrete maintenance as we know it today. Ultra-strong and ultra-durable, UHPC is being researched and tested by the Federal Highway Administration. The article on that work by Myint Lwin and Ben Graybeal begins on page 50.

The articles about concrete bridge preservation and those describing the interesting projects being built throughout the country, are but a glimpse of the innovative ways concrete is being used to sustain the nation's infrastructure. We endeavor to continue to bring you the best and most innovative projects in every issue of *ASPIRE*! We hope you enjoy and benefit from their presentation. Be sure to tell us about your projects. It's easy to drop us a line from [www.aspirebridge.org](http://www.aspirebridge.org). You can also help by completing a brief survey there that will give us guidance about *ASPIRE*. All previous issues of *ASPIRE* can be viewed or downloaded from the website.

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