



Photo: PCI

Time to Become an Industry Influencer

William N. Nickas, *Editor-in-Chief*

We have all been hearing and learning more about environmental product declarations and life-cycle assessment (LCA), which are allowing civil engineers to bring rigor (and hopefully credibility) to the evaluation of resiliency and sustainability. My daughter mentioned to me a lesson that her science teacher taught on sustainable practices for our Earth. The teacher started by stating that my daughter's generation deserves a better globe. Most of us would probably agree with that premise. She then pointed to countries that are less developed than the United States and explained that although these countries may have fewer pollution controls than U.S. manufacturing standards, industrialized nations must lead by example. As my daughter recounted her lesson, I was still agreeing with the teacher. Finally, the teacher stated that concrete is not a sustainable construction material because its use necessitates mining materials, cooking them at high temperatures using lots of energy, and releasing carbon dioxide. This is where she lost me. We should not be talking about sustainability without considering performance.

When I shared this story during a recent industry stakeholder meeting, Chris Lechner of the Precast Concrete Manufacturers Association was kind enough to tell me about a similar experience he had in Texas when a local newspaper published an article about new wood structures.¹ Here is what Chris wrote in response to that article.

Dear Editor,

Given Josh Baugh's third paragraph in the September 25, 2019, article in the San Antonio Express-News, "San Antonio Office Structure Includes More Wood," he obviously expected a response. The gist of the story appears to be that going to Canada and Austria, cutting trees, grinding them up, soaking them in chemicals, and sending what remains to a factory to be glued back

together then shipped via train, ship, and truck halfway across the world is not only environmentally friendly but sustainable. Really?

The article then attempts to portray concrete as bad by confusing it with cement and ignoring the continuing reduction efforts of the industry. Concrete's carbon footprint will continue to drop while the wood industry tries to convince you cutting trees just prior to their most environmentally beneficial years is a good thing.

And, while wood takes shots at other materials, Texans along the Gulf Coast deal with [Hurricane] Harvey's gifts of mold and rot. Each year Texans, and our friends to the north, haul away tons of the splintered remains left behind by hurricanes and tornadoes. Moreover, wood is trying to convince fire and code officials across the country that their high-rise wood buildings won't burn.

Steel-reinforced precast concrete is an engineered solution to the future challenges facing the built environment. We have our challenges and face them honestly and aboveboard. The wood industry's "greenwashing" is a disservice to those who build and inhabit these buildings believing they are helping the environment. Breathe deep, Josh, but be aware that what you're really smelling is not the trees but the chemical off-gassing of volatile organic compounds.

Chris, thank you for sharing your well-written letter.

Why do I share these stories? Because I'd like to motivate you to get engaged. We all need to educate ourselves on all aspects of sustainability, not just the focus of the moment. Emily Lorenz's Concrete Bridge

Editor-in-Chief

William N. Nickas • wnickas@pci.org

Managing Technical Editor

Dr. Krista M. Brown

Managing Technical Editor Emeritus

Dr. Reid W. Castrodale

Technical Editors

Monica Schultes, Angela Tremblay

Program Manager

Trina Brown • tbrown@pci.org

Associate Editor

Thomas L. Klemens • tklemens@pci.org

Copy Editors

Elizabeth Nishiura, Laura Vidale

Layout Design

Walter Furie

Editorial Advisory Board

William N. Nickas, *Precast/Prestressed Concrete Institute*

Dr. Krista M. Brown, *Independent Consultant*

Dr. Reid W. Castrodale, *Castrodale Engineering Consultants PC*

Gregg Freeby, *American Segmental Bridge Institute*

Pete Fosnough, *Epoxy Interest Group of the Concrete Reinforcing Steel Institute*

Tony Johnson, *Post-Tensioning Institute*

Cover

The main span of the 1884-ft-long, 15-span, high-level Tom Staed Veterans Memorial Bridge over the Halifax River in Daytona Beach, Fla., was the first precast concrete deck through-arch structure in the United States. WSP led the design team.

Ad Sales

Jim Oestmann • joestmann@arlpub.com

Phone: (847) 924-5497

Reprints

lisa scacco • lscacco@pci.org

Publisher

Precast/Prestressed Concrete Institute

Bob Risser, President

If you need to update your contact information with us or have a suggestion for a project or topic to be considered for *ASPIRE*, please send an email to info@aspirebridge.org.

Postmaster: Send address changes to *ASPIRE*, 8770 W. Bryn Mawr Ave., Suite 1150, Chicago, IL 60631. Standard postage paid at Chicago, IL, and additional mailing offices.

ASPIRE (Vol. 17, No. 2), ISSN 1935-2093 is published quarterly by the Precast/Prestressed Concrete Institute.

<https://doi.org/10.15554/asp17.2>

Copyright 2023 Precast/Prestressed Concrete Institute.



American Segmental Bridge Institute



Epoxy Interest Group



Expanded Shale, Clay and Slate Institute



NATIONAL READY MIXED CONCRETE ASSOCIATION



Precast/Prestressed Concrete Institute



Post-Tensioning Institute



SILICA FUME ASSOCIATION

Stewardship article in the Fall 2022 issue of *ASPIRE*[®] provides an environmental impact primer with 16 references to help get you up to speed.

Stewardship has been a big part of our industry for a long time, and it is the basis of the LCA and life-cycle cost analysis (LCCA) methods that our industry uses. In 2021, the American Association of State Highway and Transportation Officials published its *Guide to Bridge Preservation Actions*,² which aids owners in the decision-making processes associated with extending in-service bridge life. It includes a suite of actions, which can be included in an LCA or LCCA, to preserve and renew all types of bridges.

Our industry continues to evolve in its stewardship and sustainability-related efforts. Gregg Freeby, chair of the National Concrete Bridge Council (NCBC), and Chris Garrell of the National Steel Bridge Alliance (NSBA) have initiated a collaborative effort related to the sustainability of competing bridge materials—concrete and steel. These two groups are looking to participate in efforts by the Federal Highway


Administration (FHWA) to develop a sustainable infrastructure guidance document (similar to the one developed for concrete and asphalt pavements through the program mentioned in Lorenz's latest Concrete Bridge Stewardship article on page 28 of this issue).

This effort by NCBC, NSBA, and FHWA will discourage the practice of picking and choosing among sustainable attributes, which can hinder the civil engineering profession from providing the best solution for the performance requirements of a project. This industry-agnostic guidance, which will encourage evaluation of a full set of environmental and social impacts together with LCCA, will be based on industry best practices, existing standards, and value-engineering principles. These tools will enable the civil engineering profession to make the most sustainable choice for a given project.

Bridge engineers can understand that using sustainability analysis for materials' selections without evaluating performance is shortsighted. And

to understand and manage impacts with performance in mind, we must evaluate sustainability for the full project life (from cradle to grave) and beyond. To keep performance relevant, we must stop using cradle-to-grave analyses and evaluate the full service life of the investment. I hope you will be inspired by Chris's letter to the editor and my thoughts here to take action as an industry advocate. Let's redirect the conversations in our hometowns by sharing the full picture.

References

1. Baugh, J. 2019. "Wood Makes a Difference in New Six-Story Office Building in San Antonio." *San Antonio Express-News*, August 26, 2019. <https://www.expressnews.com/news/local/article/Wood-makes-a-difference-in-new-six-story-office-14377710.php?cmpid=gsa-mysa-result>.
2. American Association of State Highway and Transportation Officials (AASHTO). 2021. *Guide to Bridge Preservation Actions*. Washington, DC: AASHTO. 



When the Project Throws You a Curve ... Five Decades of Form-Making Experience Matters.

Project: *Houston Grand Parkway Project*

Clients: *Williams Brothers Construction
Valley Prestress Products*

Our Role: *Hamilton Form provided the custom steel forms for the beltway's huge curved U96 beams which were used to build the first curved U-beam flyover bridges in Texas.*

*"Formwork has a significant impact on the success of a project. That's why we use Hamilton Form."
— Valley Prestress Products*



Hamilton Form Company

*Custom forms
Custom equipment
Practical solutions*
www.hamiltonform.com
sales@hamiltonform.com
817-590-2111



For more than 55 years, Hamilton Form has been helping the precast community meet its greatest challenges. It's all we do.