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 sustainability, not just the environmental 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 us of the best practices in their most environmentally beneficial years is a good thing.

And, while wood takes shots at other materials, Texas along the Gulf Coast deal with Hurricane Harvey’s floods of mold and rot. Each year Texans, and our friends to the north, baux 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. 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.

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 Congress view and sustainability. My daughter mentioned to me a lesson that her science teacher taught on sustainability, not just the environmental friendly but sustainable. Really?

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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 Congress view on sustainability is a good example.
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, 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-gate 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