

# A Call to Action for the Entire Concrete Industry—Including Bridges

## Introducing NEU: An ACI Center of Excellence for Carbon Neutral Concrete

by Dr. Andrea Schokker, American Concrete Institute

Despite the vast amount of work done by the concrete industry to reduce our carbon footprint, concrete continues to have challenges with public and policy-maker perception. We in the industry know that we have more to do; at the same time, the image of concrete as “bad for the environment” needs to shift to an understanding of the opportunity we have and the part we must continue to play in reducing concrete’s global carbon footprint. In particular, the discussion must go beyond just embodied carbon and address the resiliency benefits and long-term reduction in energy use that a concrete solution can provide. Near-term solutions must be realistic and ready to scale to the enormous demands of our industry.

The concrete industry is complicated, with significant regional variation and availability. Policy makers are pushing for solutions now, and without our input, the proposals often look like one-size-fits-all attempts that simply cannot work beyond the region where the limits are developed. We have already missed the opportunity to get in front of this type of legislation in some parts of the United States, but we can catch up and lead future efforts if we work together as a united front.

### Center of Excellence for Carbon Neutral Concrete

The American Concrete Institute (ACI) has established NEU as an ACI Center of Excellence for Carbon Neutral Concrete to drive research, education, awareness, and global adoption of the use of carbon-neutral materials and technologies in the built

environment. Established by ACI this spring, NEU leverages ACI’s role as a world-leading authority and resource for the development, dissemination, and adoption of consensus-based standards for concrete design, construction, and materials. NEU is envisioned as an opportunity for new carbon-reduction technologies to enter the concrete industry, and it can direct necessary resources to accelerate the adoption of those technologies. Most importantly, NEU can build on the large amount of work that has already been done throughout the concrete industry to provide a unified front to the public, policy makers, and all those interested in how concrete can play a role in a carbon-neutral future.

To achieve NEU’s goal of providing access to the technologies and

knowledge needed to effectively and safely produce and place carbon-neutral concrete in the built environment, the following core functions have been established:

- Technology acceleration
- Technology transfer and professional development
- Technology assessment and validation
- Coordination with ACI committees
- Advocacy and technical support
- International and student outreach

These core functions will enable NEU to work with other organizations to develop viable solutions that can be implemented quickly. NEU is also focused on leading a widespread change of culture in the concrete industry to drive these solutions as well as to help the public understand the



As an American Concrete Institute (ACI) Center of Excellence, NEU leverages ACI’s role as a world-leading authority and resource for the development, dissemination, and adoption of consensus-based standards for concrete design, construction, and materials. All Photos and Figures: NEU.

	NEU Board Seat	Special project options	NEU SDC Seat	Discounts on NEU products	Access to NEU center documents
Sustaining Member	✓	✓	✓	✓	✓
Supporting Member	—	—	✓	✓	✓
*Affiliate Member	—	—	*	✓	✓

\*Opportunity for election to an at-large position on the NEU SDC  
SDC = Strategic Development Committee

NEU offers three membership tiers—sustaining, supporting, and affiliate—with different levels of participation and benefits.

significant role played by the concrete industry in achieving carbon neutrality.

Research on cement and concrete sustainability and resiliency is currently fragmented and lacks a clear common goal. Significant resources are being channeled into ideas and technologies that simply will never be implemented. High-risk, high-reward research has its place, but NEU will keep its focus on technologies that experts can support as being realistic, applicable, cost effective, and technologically effective. It will take a focused, informed, technologically advanced organization to develop the necessary technologies. NEU will assume that responsibility and work directly with other major entities worldwide to achieve the desired outcome.

NEU is well placed to lead this effort. It can draw upon ACI's global reputation and existing resources for education, certification, and code and standards development, as well as access to the enormous knowledge base provided by the ACI technical committees, to

Federación Interamericana del Cemento recently signed an agreement to work with NEU on reducing carbon in the concrete construction industry.

move quickly and unify the voice of the concrete industry. The funding for NEU is provided by a three-tier membership that includes owners, developers, producers, manufacturers, engineers, architects, contractors, and technical institutes. Two members, Meta and Breakthrough Energy, have already joined at the top-tier membership level of \$500,000 per year. These first two top-tier members join our first second-tier member, Baker Concrete Construction, and several other parties are also discussing higher-level memberships. These initial members show that the investment of those within the construction industry, as well as those outside of the industry, can make important contributions toward achieving carbon-neutrality goals for concrete. We are also working with many organizations across the globe, including nonprofits and governmental agencies, that will participate as affiliate members. These organizations recognize the need for the industry worldwide to work together toward a common carbon-reduction goal. The Federación Interamericana del Cemento (FICEM) and

ICC-Evaluation Services are the first two organizations to sign a memorandum of understanding with NEU. NEU has also joined the National Institute of Standards and Technology (NIST) Consortium for Measurements of Low Carbon Cements and Concrete.

## Engaging the Transportation Sector

While ACI has traditionally focused on buildings, parking structures, and other vertical structures, the scope of NEU goes beyond these applications to all uses of concrete globally. We are planning to actively engage the transportation sector as a critical component of this work. In particular, the bridge industry is hugely important as we continue to upgrade infrastructure with concrete as a resilient and sustainable solution. *ASPIRE*<sup>®</sup> has featured some excellent articles on these efforts and has highlighted some opportunities for the bridge community. (For example, see the Perspective articles in the Winter and Spring 2022 issues of *ASPIRE*.)

For future infrastructure spending, it is important that owners and the public know that funds spent on concrete are a good investment in our global future. We already have many of the tools needed to make an impact on the embodied carbon of new structures as well as significant benefits when considering the service life of concrete bridges.

## The Call to Action

Our call to action at this moment in time is to come together with a common voice to change the perception of concrete so it becomes recognized as a sustainable and resilient solution for a carbon-neutral future. NEU is here to facilitate that transformation and to work with all components of our industry to move this initiative forward quickly. We will also work hard to address the roadblocks to advancement, whether real or perceived.

I hope you'll work with us to act now. As the technical consultant for NEU, one of my focus areas is as a liaison to the bridge industry, so please feel free to reach out to me. Learn more about NEU, including contact information and resources, by visiting the NEU website: <https://www.neuconcrete.org>. 

