

*NCSEA Summit Scholarship Application
Katherine Rivera (Returning Applicant)*

What is your opinion about the public's perception of structural engineers? Provide suggestions for how structural engineers might increase recognition and general public awareness of the profession.

“Oh wow, that’s like an architect?” If you’re lucky “that’s some kind of civil engineering, right?” Cocktail party small talk seems to invariably grind to a confused halt. There’s a puzzled reverence as though they think it’s impressive, but don’t know what it actually means. I’m sure we all have a “line” of how we distinguish our profession in conversation when talking to people outside of AEC. My quippy version is “architects make it beautiful, we make it stand.” But even this reinforces a common misconception about our field that architects are solely responsible for the design of structures, while structural engineers are limited to ensuring their stability.

Every member of the public interacts with the work of a structural engineer on a daily basis in every facet of their lives. The average American may go through one day and experience the efforts of dozens of structural engineers - from a wood-framed home, to the canopy of a gas station, into their concrete and steel office building, to their child’s brick masonry school, and then the overpass on the road back home. These and so many more structures that are taken for granted as simply part of the world we live in. Structural engineers are behind the scenes creating and maintaining these facets of everyday life, yet we still get this look of confusion when we say who we are.

One of the key reasons for the public's limited knowledge about structural engineers is the absence of comprehensive education and information about their profession. Most K-12 educations do not provide substantial coverage of the variety of fields within engineering, leading to a lack of awareness among students and the general public alike. The primary exposure that the general public has to all of the AEC industry is through the lens of architecture alone. The media tends to focus on star architects and their creative designs, overshadowing the essential contributions of structural engineers. Television shows, movies, and news stories often portray architects as the sole visionaries behind remarkable structures, neglecting the collaboration and expertise of structural engineers in ensuring the safety and functionality of these creations.

This oversimplification overlooks the collaborative nature of the architectural and engineering disciplines. In reality, structural engineers work hand in hand with architects, translating their visionary designs into safe and functional structures. We bring knowledge of materials, structural systems, and building codes to the table, contributing to the overall design process. We have key expertise that ensures that the structures are not only visually appealing but also structurally sound, considering factors such as load distribution, seismic resilience, and environmental impact.

Engineering is typically seen as a technical and specialized field, which it certainly is, but that is not the end of our expertise. The public seems to have a perception of structural engineers as mere technical experts who run numbers. This perception fails to capture the multidimensional aspects of our work and the creativity required to find solutions to complex design challenges. Structural engineers possess a unique blend of technical expertise, problem-solving skills, and creativity. Part of our dedication to structural engineering excellence is the ability to balance safety, functionality, and aesthetics while working within constraints.

Beyond our collaboration with architects, our charge as engineers is first and foremost to humanity. The commitment of structural engineers to our communities is unwavering. We understand that our work directly impacts the safety, functionality, and resilience of the built environment in which communities thrive. Whether it is designing earthquake-resistant buildings in seismic-prone regions or implementing sustainable practices to minimize environmental impact, structural engineers prioritize the well-being and long-term sustainability of communities. The commitment of structural engineers extends beyond the confines of our projects, as they continuously seek to contribute to the betterment of communities, enhancing the quality of life for all residents.

To shift the public's perception, it is crucial to promote educational initiatives that highlight the role of structural engineers. We should highlight not only our technical expertise, but our innovative practices and dedication to engineering for humanity.

We as individuals are often the first structural engineer that any given member of the public has ever met, and we should be thoughtful that we act as ambassadors. We exemplify our dedication to engineering for our communities and structural engineering excellence. Individuals can also make a significant impact through education outreach. Incorporating structural engineering concepts into school curricula can introduce students to the profession at an early age, fostering curiosity and awareness. As a child, I had never met an engineer before I applied to college to be one. We should aim to participate in public outreach to get an engineer in front of every high school physics and math class. I am active with SEAoNY's Student Outreach efforts as well as AIANY's Family Day events and see tremendous value in showing young people an example for what engineers look like - we are real people doing real and impactful work.

Additionally, we should work at larger scales. Media platforms can play a significant role in shaping public perception. Including structural engineers in television shows, documentaries, and news features can showcase their expertise and highlight the integral role they play in construction projects. Collaboration between architects and structural engineers can also be highlighted to emphasize the importance of their joint efforts in creating iconic structures. Architectural awards should ensure that the structural engineer is mentioned as part of their achievements. Structural engineers often are only in the news to discuss the technical aspects of a collapse rather than highlighting our contributions to SEER efforts, design that allows for accelerated rebuilding, and code revision to ensure safety in future events.

Professional organizations and industry associations can organize public outreach programs, such as advertising campaigns, museum exhibitions, and community engagement, to educate the general public about the work of structural engineers. These initiatives can provide opportunities for interaction, where people can learn about the intricacies of the profession and appreciate its impact on the built environment.

From our role as individuals to the collective initiatives from national organizations, we must work to highlight and extoll our contributions to our industry, our firms, and our communities.