

Richard Kirchner (MNSEA)
2020 Young Member Summit Scholarship

What is the greatest challenge facing structural engineers and/or the structural engineering profession in the next five years? Please identify how your local SEA and/or NCSEA can address this issue.

The greatest challenge facing structural engineers has absolutely nothing to do with structural engineering. Who would have thought? The solution to this issue cannot be found in a building code, nor a referenced standard of any kind. So, if it is not an issue that can be solved through engineering analysis, what could it be? Plain and simple, the greatest challenge facing our industry is the commoditization of our services. Commoditization of our services occurs when our clients begin to devalue our services by adopting a mindset that the structure for their building will be similarly designed, regardless of which structural engineer they select. This leads to building owners and architects shopping around until they find the cheapest engineer in town. We must fight this tendency, this presumption that all engineers produce the same design.

In many ways, we are our own worst enemy. We agree to take on jobs at a loss in profit. We convince ourselves that this loss is really an investment in a new client, which will have a return that will make it all worthwhile. But what really happens? This new client starts to become more comfortable with the lower prices, and begins to wonder why the next job can't be done at that same price, which ultimately leads to undermining the value that structural engineering provides to the communities it serves. Continual underbidding by engineers leads to devaluation of our profession. It is the punching of a new notch in an old belt that can only be tightened, never loosened.

Would it be possible to loosen this old belt? Instead of hours worked, our industry must adopt a culture of value provided. A commonly occurring example would be to compare how two engineers might design the same building under the same design criteria. Engineer A may take 30% longer than Engineer B to perform the design. So, did Engineer A provide more value to the project because s/he took longer? Or rather, a better way to ask the same question would be: did Engineer B provide less value to the project because s/he took less time? I would argue that the proper answer to each of these questions is: absolutely not. Working under the assumption that both engineers are licensed individuals who maintain a code of ethics and follow the building code to the letter of the law, then it's hard to argue that more value was added to the project just because more time was spent on the project. The real issue our industry faces is when Engineer B approaches their client and says, "I take fewer time than Engineer A, therefore, my fee is less." How can this be if the same value is provided? It's because we have a direct correlation between time and value provided. This must simply not be true.

Have you ever been Engineer B? This scenario, which plays out daily in our industry, is exactly what undermines the value that structural engineers bring to the build industry. Rather than fighting over 0.5% of the construction cost, we should be relishing in the 4-6% that realtors make. Surely, we as structural engineers, provide more value to the final built product relative to our realtor friends (bless their hearts)! Yet, in some ways we feel guilty when we make a considerable profit. We feel as if we must maintain modesty in our work. Let us understand that modesty does not equate to paying ourselves poorly. Rather, confidence in our skillset and a true understanding of the value we provide should equate to being paid a fair fee.

Let us recognize the instability we create in our industry when we undermine each other with bidding wars. Just as a good engineer would recognize the undermining of a foundation system, we should exercise our business muscles in addition to our engineering muscles to ensure we do not undermine our very own value provided.

Commoditization of our industry has many consequences, the worst of which being a workforce shortage. Where is all the talent in our industry going? Why can't our industry retain talented individuals? Well, what happens if we follow the money? It leads us to the talent that went missing. Isn't it obvious that we need to offer competitive salaries to address this issue? Most engineers take their engineering profession as a serious part of their identity, but at the end of the day, it's an innate human characteristic to be selfish; to work as a means to live and not the other way around. We all show up at work to get paid, and if we are not paying ourselves well enough, guess what? People stop showing up. They start exiting the structural engineering industry, and entering other industries where their passions for math, science, and engineering can be fulfilled AND they can make a better income.

So, what do we do? How do we fix this problem of not getting paid fairly? Patience is key, as these things indeed take time. But we must also balance it with a hasty approach. Let us not be defeated by the "it'll never happen" mentality or the "not my problem" mindset. This issue is the tragedy of the commons; it's everyone's problem, therefore it's no one's problem. Let us flip that style of thinking on its head and make it the success of the commons. Let's start developing a sense of confidence in our abilities as engineers and a sense of self-worth. Let's take our renewed sense of self-worth and encourage our clients to pay us fairly. It will obviously come with rejection, and we will inevitably get knocked down. But just because we've been knocked down, doesn't mean we have to stay there. Let's get the flywheel going by each grabbing a cog of the wheel, and make sure we're all pushing in the same direction. Individually, none of us can move the wheel. But together, we can set the flywheel in motion. Before we know it, it will have so much momentum that we will begin to wonder why we were ever content with our previous pay. Let's fight commoditization together. We're engineers, we can solve this problem.