



“Passion and Purpose”

By C. Ben Nelson, P.E., SECB, NCSEA Board Member

I love my sackbut...really, I do. I've been playing my sackbut for almost forty years and I've learned that I am a better structural engineer for having done so. A sackbut is a renaissance name for the slide trombone, derived from the French word *sacqueboute*, which means “pull-push.” I've heard innumerable jokes through the years. A musician friend always says that neither the trombone (nor trombonists) have evolved much in the last 500 years. Also, we all know that it is difficult to trust anyone whose instrument changes shape as he plays it, and that trombonists can't tell if they are coming or going when they push and pull their slide. However, did you know that trombonists are the only musicians who routinely apply Newton's Third Law (for each force that is pushed or pulled, there is an equal and opposite reaction)? Still, I know that playing my trombone has made me a better structural engineer and I can only hope young structural engineers can develop a similar connection to something they enjoy.

Almost thirty years ago, my most inspiring engineering professor from the University of Colorado, Kurt Gerstle, implored me to “follow your passion...with you, it's music – it will make you a great structural engineer.” He never said why,

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he just said it would be so and that I would come to learn why in due time. In my senior year, the late great structural engineer, Milo Ketchum, Jr. preached a similar sermon when he interviewed me. When he asked of my interests, I told him of my love of performing music and his eyes lit up. He said, “Structural engineering, in its purest form, resonates with beauty in appearance and load path, much like performing magnificent music in perfect pitch. Follow your passion of music and integrate it into your engineering career and you will be happy, as well as a great listener to your clients.”

As a young engineer, I sought work on several projects in our firm involving cultural and performing arts venues. They were technically challenging and greatly improved my engineering skills. I found this work very rewarding since I discovered I could contribute at a musical and intellectual level by utilizing some performing arts project-specific “language.” I discovered I could relate to the User and Owner Groups and other designers by connecting their needs with my personal music experiences in developing their designs. It really hit home when a long-time friend and conductor Alan McMurray told me, “Your enthusiasm for blending your structural engineering with music and the arts is obvious. You listen to the project like a musician and you conduct yourself in the rehearsal hall design process just as I like to conduct my Wind Symphony – with passion and purpose.”

Fazlur Khan “believed in passionately pursuing one's calling” according to his daughter Yasmin Sabina Khan, in her book, *Engineering Architecture*. Khan also embraced the arts, and when interviewed in 1972 after being named *Engineering News Record's* Construction Man of the Year, he said, “The technical man must not be lost in his own technology. He must be able to appreciate life; and life is art, drama, music, and most importantly, people.” These words are immortalized in a Khan Memorial in Chicago.

I believe truly great engineers appreciate the art in our projects and impart their passion to countless others. As we mentor future generations of structural engineers, what better message to instill than “passion and purpose” to those whom we guide? Passionate engineers are preaching great sermons relating the important purpose we engineers have in society.

Two great examples were recently featured in STRUCTURE® magazine. NCSEA past-president Ed Huston recently described traveling the world to view structural masterworks. He eloquently described how inspirational it was to witness people all around him talk of the amazing aesthetic appeal of this bridge or that building, knowing that a structural engineer's design made it all possible. Last year, STRUCTURE magazine Editorial Board Chair Jon Schmidt waxed philosophical about philosophy in engineering. He reminded us that, while it is imperative to emphasize a strong technical content in our structural engineering curriculum, we cannot neglect to focus on the importance of philosophy and the arts and the role they play in educating our future structural engineers.

I've learned from all these great people that committing one's career to excellence by combining our technical expertise with our individual passions will ultimately lead to success and fulfillment, and to a career rich with purpose. It's like riding a train that gains momentum and that is nearly impossible to derail, much less slow down.

A portion of NCSEA's annual conference this October in Arizona will focus on *Helping Create the Next Generation of Leaders*. The NCSEA annual plenary session and breakout discussions have become especially popular and should not be missed.

You will come away this year with insight on how ‘Boomers’, ‘Gen-Xers’ and ‘Gen-Y's’ view their career, success and leadership. Personally, I'm looking forward to hearing my peers profess the passions of their profession. It is rejuvenating to talk with each other about all the successful projects and challenges we faced in route. If asked, I might even pontificate on my prolific performances as I've pushed and pulled my sackbut.■

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