

The Wealth Creators

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The building industry – whose key members include precast/prestressed concrete producers and contractors as well as structural engineers and architects – is a wonderful and noble business. And we in the business find talking and writing about it easy to do, and so exciting. Unfortunately, most of this takes place within the confines of the industry. Few people, especially young people, are privy to our conversations and discussions. Nor are they kept apprised of within-the-industry efforts at celebrating the pace-setting feats of its members.

For our industry to reach its highest potential, this must change. Accomplishing such change requires that its members become more conspicuous in society and involved in improving their communities, which is easily within their capabilities. We just need the will to do so. As Henry Ford reminded us, “Whether you think you can or you think you can’t, you’re right.”

If we had to create a dream profession with notable characters in it, how could we come up with anything better than what we have – a respected (albeit obscure) occupation that builds remarkable, history-altering edifices? And how could we create any better role models than those in our profession – ingenious engineers and designers, precasters and constructors responsible for highly noteworthy projects?

These men and women add value because they know how to do something productive, like build a complex bridge or multi-story building, or some other structure. They are, in essence, the country’s wealth creators helping enlarge the national economic pie – not merely dividing it, as other professions have a tendency to do.

In public surveys referencing engineers, these professionals are always at the top of the list when it comes to knowing who has high ethics, who is honorable and who solves problems. The public already believes engineers are trustworthy, hard working, and smart. Still, most people don’t seem to know what engineers do. They’re so infrequently in the public eye through print and broadcast media that the

average person doesn’t have a clear picture of the worth of engineering and the building community. When the media are asked to produce lists of leaders or hero figures, engineers and builders rarely, if ever, make these lists.

Should we be concerned? Certainly! Indicators show that the majority of America’s young people are shunning the profession – that our nation’s engineering and building communities face a defining moment, one that will significantly affect the country’s employment base for generations to come.

In his Chairman’s Message “Developing Our Technology Will Require More Young Engineers” (PCI JOURNAL, May-June 2003), Michael Quinlan opined, “If our industry is to continue to develop our technology, we must hire and develop more young engineers, and we must do it now.” He stressed that it takes years for well-educated engineers to hone their precast design skills. He recalled, “During the last economic expansion, most of our companies experienced a shortage of engineering personnel. Will we be prepared when the next economic expansion arrives?”

Couple this concern with the trend in which every year fewer high school seniors pursue engineering as a career. According to ACT (the national college placement testing organization based in Iowa City, Iowa), of the one million seniors who took the ACT exam in 2002 and stated a major, only 5.5 percent said they intend to study engineering, a decline from 8.6 percent in 1992. Equally disturbing is that many would-be engineers are less prepared academically than their predecessors because they lack adequate backgrounds in science and mathematics. For instance, only half of them have studied calculus in high school.

Fewer than 2 percent of the female students taking the ACTs indicated they wanted to become engineers (the lowest percentage in contemporary times). On the average, their grades were higher and they were better prepared academically than their male counterparts – with high school females having taken a fuller range of advanced math and science courses.

This extreme lack of interest in engineering and building trades doesn't bode well for the future of our country or our building industries. According to Mr. Quinlan, the precast industry's long-term well-being will greatly depend on developing its technology – and key to this will be “bright young students with fresh ideas.” He stressed the urgency to “build more professional depth” and “begin replenishing its engineering base today.”

PCI is addressing some of these issues, mainly through the PCI Education Foundation, Student Education Committee, and Summer Intern Program. But much more needs to – and can – be done. However, PCI need not fight the battle alone. Every industry group shares anxiety over the seemingly wholesale abandonment by America's young toward engineering and construction careers.

For example, the American Council of Engineering Companies (ACEC), in its 2001 publication *Eye to the Future*, reported: “U.S. engineering company leaders rank attracting and retaining young people as one of the major issues, if not the major issue, currently facing the consulting engineering industry. The capacity to attract more American students to become engineers, let alone consulting engineers, however, is beyond ACEC's capability alone. The whole effort will require enormous collaborations, involving several professional societies, the National Academy of Science, the National Academy of Engineering, educators and members of the construction industry. Estimates are that it will take a five- to ten-year commitment to see results.”

ACEC expressed that a major underdeveloped source of new professionals can be found in a focused, meaningful program aimed at women, minorities, and other groups currently underrepresented in the U.S. engineering industry. America's rapidly changing demographics would substantiate this as a fruitful undertaking.

If adequate numbers of young Americans aren't attracted into the crucial fields that provide services and products – like engineering and manufacturing – for the built environment, most American businesses will experience the following consequences (many already have!):

- More skilled workers will be brought into the United States on temporary visas. (This is well under way in the information technology industries. The current debacle involving the abuses of the H-1B and L-1 visa programs is fast becoming a national scandal.)
- Outsourcing will increase. (Today's global communication tools, in particular the Internet, allow ready access to labor markets worldwide, many of them at much cheaper salaries than in the United States. Increasingly, American businesses will ship more of their non-site-dependent, skilled-worker jobs to overseas locations.)
- More foreign companies will enter the U.S. marketplace, get projects, and ship the non-site-specific and/or non-American-factory-built ingredients of the work back to their home country.

As we move deeper into the 21st century, the world will become more technologically complex. And looming advances in civilization will go hand in hand with advances in

engineering and construction. Over the years, both activities have improved everyone's standard of living and helped create wealth. Tomorrow, they'll be even more critical. This will demand that more engineers and builders take public leadership positions.

Just knowing we're needed, especially in booming economies, however, won't suffice in our future world. For the precast community to achieve greatness – and attract adequate numbers of bright youngsters – it can't rest on past laurels. Identifying the problem or an emerging dilemma is the first step in confronting it; taking aggressive action to correct it is the second. As pointed out by George Bernard Shaw: “The people who get on in this world are the people who get up and look for the circumstances they want, and, if they can't find them, make them.”

In the United States, it seems, we educate more people like lawyers and stockbrokers who are orientated to dividing up the economic pie. Fewer people are being educated to create and enlarge that pie. We need more producers and wealth creators, not pie dividers.

So how do we reverse these trends? It's completely up to us. The next generation of engineers and builders will depend on our efforts and what we put into play – today and in the future. To paraphrase Robert F. Kennedy: Some men see things as they are and say “Why?” I dream things that never were and say “Why not?”

As ACEC and others have concluded, getting our youth hooked on engineering today goes beyond the capabilities of any one association. To supplement their efforts to interest young people in engineering, PCI and its members should collaborate with other groups and pool resources.

Concentrating on attracting talented young engineers to go into the precast/prestressed industry, though, must remain a main focus of PCI's outreach plans – attract them, retain them, and provide them opportunities to grow and prosper.

PCI's commendable education outreach and public awareness efforts, including its publications and awards programs, help accomplish this. But no matter how effective they've been, they'll need constant tweaking. More importantly, by themselves, they can't be the total solution.

We can't overlook the fact that young men and women today want role models and heroes – people they can look up to and emulate – in their chosen professions. It's important that they know about industry heroes – and that these heroic leaders help shape this nation's future. Their work is relevant to everyday events, the economy and the standard of living for all Americans.

To accomplish that means members of the precast world have to become much more visible – and involved in leadership roles beyond the engineering and building industries – than in the past. Anything less will not attract the best and brightest, interest the media, or raise awareness about the importance of our profession.

Only after large numbers of industry leaders step forward and make our profession known to average people can we feel we've left a noteworthy legacy to future generations.