ENGINEERING THE NEXT GEN WORKFORCE

MENTORING, SKILLS-BASED TRAINING, AND PROFESSIONAL DEVELOPMENT ARE AMONG KEYS TO GROWING THE AEC INDUSTRY.

By Israa Ajam

THERE'S CONSIDERABLE CONVERSATION in the engineering space about workforce development and fostering diversity in the building and construction world — along with a number of programs intended to stimulate the process. The growth and widespread enthusiasm for the ACE Mentor Program (established in 1995) and STEM (first coined in early 2000s) are just two examples of programs that reach out to and support young people from all backgrounds.

Yet a 2012 study released at the American Institute of Architects 2012 National Convention and Design Exposition revealed that there is a continuing decline of skilled AEC workers due to three primary factors: the nation's economic slump, mass retirement of AEC professionals, and a shortage of young skilled workers entering into architecture, engineering, and construction roles (Dodge Data & Analytics).

Perhaps even more disturbing is the loss of those young people, particularly women, who go through the education and enter the field but don't stay. The Stemming the Tide: Why Women Leave Engineering study (www.studyofwork.com/2012/09/women-engineers-a-national-study-of-attrition-and-persistence), conducted by professors at the University of Wisconsin-Milwaukee, evaluated more than 5,000 female engineering alumnae in varied life and career stages. The report found that while more than 20 percent of engineering graduates have been women for the last 20 years, just 11 percent of practicing engineers today are women.

According to survey respondents, the top reasons that women leave the engineering profession include lack of job satisfaction, few reliable female role models, inflexible work schedules, workplace discrimination, "white Midwestern men syndrome," and glass ceiling issues. Anecdotally, men report similar concerns about job satisfaction and inflexible work schedules.

Emerging workforce shortages and poor retention portend difficult times ahead. According to the U .S. Bureau of Labor Statistics, between 2014 and 2024 the construction industry is anticipated to undergo the largest increase in job growth, compared with other industries. Architecture and engineering sectors alone will potentially add 67,200 new jobs to the industry by 2024.

We as an industry, as companies, and as individuals must take proactive measures to ensure that the future of engineering is not diminished.

Mentoring: The recruiting tool that packs a punch

One effective way to build excitement about our industry is through mentoring, a research-proven technique credited with opening the hearts and minds of individuals still undecided about their career paths.

The one-on-one interactions between mentors and students are an ideal forum for dialogue about career option, day-to-day processes, and real-world insight. It's also a unique opportunity for young people to recognize that many industry experts are actively involved in meaningful enterprises involving humanitarian efforts, which is a real selling point to the majority of Millennials.

These mentor-protégé connections also help students establish clearly defined goals to be used in preparing for college programs, certifications, internships, and even their first jobs.

The ACE Mentor Program of America (www.acementor.org) is a national

nonprofit organization that has done an exceptional job of inspiring young people to consider the AEC profession. First established in 1995, the program uses volunteer mentors to engage with high school students in real-life practical design, engineering, and construction activities — and it's a tremendous pipeline of diversity. According to the 2015 ACE Mentor Program Yearbook, African-American ACE students are entering college in engineering at more than twice the national average and 38 percent of women ACE graduates declare majors in architecture and civil/electrical/mechanical engineering, double the national rate of 19 percent.

Volunteer mentors come from every quadrant of the AEC realm — from architects and engineers, to interior designers and construction managers. Each individual commits to developing a rapport with high school students, educating them on the benefits of establishing a career in the AEC realm, and further supporting them as they actively pursue their career choice.

Mentors are essentially advocates of their cause. Effective mentors strive to increase public awareness of a problem that needs to be solved or an obstacle that needs to be overcome. They take action to effect positive change, and their offerings of real-world experience are an incomparable form of insight to today's youth. Young individuals can gain legitimate perspective and learn invaluable talents such as effective communication skills and best practices in collaborative settings.

Regardless of your role in the AEC industry, you are in your current position because you enjoy (most of) your job responsibilities, you find your life's work beneficial to society, and it pays the bills.

Stepping into a mentorship role — especially an ongoing one — can be a big commitment on time and perseverance. Programs like the ACE Mentor Program are built to facilitate individuals who have a little or a lot of time to give. However, the intrinsic rewards make the effort exceedingly worthwhile.

Remember, your professional experience can serve as the "road map" needed to plot a course through unfamiliar territory. Whether it is a one-time obligation or a long-term commitment, mentoring is a gratifying opportunity to enrich and expand the industry's skilled workforce.

Now, once we've inspired young people to learn more about our industry and they've gone through the challenging education, how do we keep them?

Fostering a connected community

To encourage men and women to build careers in the engineering and construction environment, some firms have put in place programs focused on retention and job satisfaction. They're introducing programs that better balance work-life situations, improve executive-employee relationships, better recognize employee contributions, and introduce transparent career paths.

Developing a quality work-life program in the engineering and construction environment can be difficult. Work is most often project-driven, and today's projects emphasize speed, so employers often need all hands on deck. However, a big backlog doesn't mean a company can't bring better balance to a busy day. There are many examples of ways to achieve this balance. For instance, a regular executive-sponsored lunch that encourages employees to sit down for an hour and talk is both enjoyable and a chance to interact with top level management. Many companies are hosting seminars that teach good work habits, focus on exercise, or introduce tools to help manage workloads. Others sponsor family activities or bring-kids-to-work days. Still others encourage community service and support these activities with time off.

To further spark executive-employee relationships, C-level executives and senior employees are building bonds outside of work. This might come about by group attendance at a sporting event or working together at a community activity, such as building a Habitat for Humanity home. For example, Habitat for Humanity is an integral part of Sebesta's community service program. Building homes is a great way to bring executives and employees together in a common environment to erect walls, install windows, siding, and insulation, and so much more. Shared breakfast and lunches during these events provide unique opportunities for meaningful dialog about experiences and professional growth and will certainly build tighter connections across the company.

Still another way to foster a culture of awareness and recognition is to spotlight professional affiliations and activities. That might be involvement with an organization such as Women in ASHRAE WiA Committee of ASHRAE NCC. The grassroots WiE Committee promotes the retention of women in the built environment by encouraging opportunities for professional development, expanding leadership skills, and creating a network of women supporting women across various professions including engineering, architecture, construction management, property development and ownership, equipment sales, and manufacturing.

Become part of the dialogue

There's no fixed prescription for growing the industry or building a diverse organization. It's more like a compilation of puzzle pieces that come together to create a complete picture. One of the most successful, and largest, pieces of the puzzle is to invest in skills-based training and professional development, which lead to promotions and career enhancements. For mobility and advancement, provide transparent career paths with fair criteria and introduce both formal and informal mentoring programs as well as networking opportunities. Also, set metrics that drive accountability and reinforce work-life obligation changes.

Finally, become part of the national dialog. Acknowledging the issues in the engineering industry with regard to workforce diversity sets the stage for conversation and the implementation of solutions that will make the work environment more inclusive, more productive, and more sustainable for everyone, all while building a workforce that is energized to meet the many challenges in the built environment.

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