

THE WAR FOR TALENT

A whitepaper and publication of the Building Futures Council,
In alliance with the Associated General Contractors



In Alliance with AGC

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EXECUTIVE SUMMARY

The A/E/C industry is losing the war for talent due to a convergence of demographic, economic, and societal trends. While the industry is occasionally recognized for innovation and excellence, the general stereotype of the construction worker, or the industry as a whole, is poor or negative. However, within the industry, there are examples of associations, organizations, companies, and individuals who are reversing this negative trend. These people are winning the war for talent and developing the future leadership of this huge segment of our economy. But, reversing a decades-old image is not going to happen overnight, if at all, unless the entire industry and leadership teams in individual companies make human resources management a strategic priority. This paper outlines the industry problem(s) with human resources, “talent management” best practices within the A/E/C industry and from other industries, and delivers specific recommendations for overcoming this obstacle. This paper is a call to action. There exists a failure to take an honest look at our existing management practices and demonstrate that the A/E/C industry is progressive and able to change with the times. Our ability to articulate those qualities—to current employees, prospective employees, teenagers forming career aspirations, and among ourselves—will determine if we win the war, or simply prolong the debate.

ABOUT THE BFC

The Building Futures Council (BFC) is a national, non-profit, private organization composed of building and construction industry decision-makers concerned with the challenges and rewards of the built environment.

The BFC mission is to act collectively as a think tank to identify critical issues encountered in the building and construction process, analyzing, discussing and advocating guidelines and criteria for improving efficiency in the process and furthering the overall well being of our nation.

INTRODUCTION

WANTED: PEOPLE WHO CAN DESIGN AND BUILD THE FUTURE

The A/E/C industry, simply put, doesn't get a lot of respect in popular culture. From tired clichés about construction workers leering at women passing by job sites to news coverage focused on safety problems or cost overruns, the image of the industry is continually battered. The many innovative and positive contributions often go unreported. When the A/E/C industry is in the news, it is often bad news.

These negative factors are confounding the industry's ability to attract, develop, and retain top talent in the management and executive ranks. The roots of this long-standing issue extend beyond popular perception. Tight margins, fragmented delivery systems, rising litigation costs, perceived adverse impact of construction on the environment, little coordinated research and development, and spotty outreach to colleges and universities are just some of the dynamics that feed into the problem. Add to this a lack of open collaboration between A/E/C segments—even within individual companies—and it's easy to see why the industry does not have a strong track record of attracting the best and brightest into the fold.

“We are the world's worst marketers to the outside world,” said Jack Chiaverini, a former executive with Perini, Inc., one of the 50 largest commercial general contracting firms in the world. “On the other hand, I don't think there's a more exciting industry that has a greater effect on our economy and quality of life than construction.”

By the numbers, construction is a major driver of the U.S. economy. In 2004, the Bureau of Labor Statistics (BLS) reported that the A/E/C industry provided nearly seven million jobs, a total that accounts for over 30 percent of what BLS describes as the “goods producing” sector (including manufacturing, natural resources, and mining). Construction

is the only non-services industry with a forecast increase in jobs and, over the next decade, it is projected to grow by over 11 percent.

Beyond the numbers, however, construction might be described as a victim of its own success. On one hand, the industry is unmatched for its ability to design and build remarkable commercial, industrial, and public works structures. On the other, the vast majority of the American public knows very little about the high level of skill and expertise it takes to safely complete such feats.

“When most people think about construction, they equate it with something that isn’t very sophisticated,” said Hugh Rice, chairman of the board for FMI Corporation, an investment banking and management consulting firm serving the A/E/C industry. “They have no idea of what goes into the planning or building of major commercial, industrial, institutional, or heavy highway structures.”

While the industry has long wrestled with talent management challenges, both at the management and trade level, a confluence of factors make this an ideal time to seriously examine the issue. Starting this year, the leading wave of the Baby Boom (those born between 1946 and 1960) will enter the period of their lives where retirement is likely. The National Science Foundation estimates that a quarter of the entire U.S. engineering and science workforce is older than 50, meaning that many may retire within the next decade. Meanwhile, in sheer workforce numbers, the following wave of talent (“Generation X”) is 30 to 40 percent smaller. Those numbers suggest that effective talent management over the next several decades will not just be important—it will be mandatory for survival.

A subset of the population issue outlined above is career interests among young people. BLS reported that college enrollments in engineering programs moved slightly higher from 2004 to 2005, but a close look reveals that most of the increase was attributable to IT-related fields. Enrollments in architecture and construction management programs, on the other hand, are flat or slightly declining. Today, more than ever before, young

graduates with strong technical skills have a variety of attractive, well-paying alternatives to the A/E/C field.

While women continue to outpace men in completing bachelor's or master's degrees, the percentage of women holding management roles in an A/E/C field is less than 10 percent—with surveys showing that many women avoid the profession because they believe it to be sexist, dangerous, and dirty. This is a disturbing trend at a time when construction professions are struggling to find enough new talent to address booming worldwide demand for commercial, residential, and public works projects.

The intent of this paper is not to deliver a single answer on “the war for talent.” Rather, this paper is intended to provide a broad overview of contributing issues and offer some possible steps that industry groups and individual companies can take to improve talent recruiting, management, and retention.

Clearly, we have a failure to communicate. But that communications issue is not simply with the general public and the media. It is a failure to speak with a unified voice about the strengths, the opportunities, and the lasting legacies a career in the architecture, engineering, and construction industries can provide. It is a failure to identify and develop the future leaders already in our organizations who will drive the growth and innovation of our industry. And, it is a failure to take an honest look at our existing management practices and demonstrate that the A/E/C industry is progressive and able to change with the times.

Our ability to articulate those qualities – to current employees, prospective employees, teenagers forming career aspirations, and among ourselves – will determine if we win the war, or simply prolong the debate.

CURRENT STATE PERSPECTIVE

DOES THE IMAGE MATCH REALITY?

Movies and television have long had love affairs with certain professions. Police and politicians, attorneys and activists, doctors and divas—to name a few—all have benefited from popular culture’s positive spin on their chosen career.

While there are any number of examples of how the A/E/C professions have been characterized in modern media, a defining moment came in the 1986 film, *The Money Pit*. This film played to all the negative stereotypes: shoddy workmanship, cost overruns, poor project planning, unsavory site workers, and endless delays (“two weeks,” for many people, still resonates as an inside joke about any delays associated with a construction project). On the commercial construction side, *Caddyshack* delivered a stinging parody of a condo developer as a brash, obnoxious outsider in polite society.

To be sure, positive stories about the A/E/C professions can be found, most frequently on the Discovery Channel, the History Channel and, on occasion, local public television outlets. This type of feature or documentary programming tends to highlight unusual or historic projects—programs viewed by a loyal contingent of the American public that profess a deep appreciation for how complex construction challenges have been solved through history. However, these make up only a fraction of programming in a 24/7 media world and appeal to a limited audience.

The prevailing public perception is that construction-related careers are low-skill, low-prestige, and low-wage. For example, during a recent outreach event between the Building Futures Council (BFC) and graduate students pursuing engineering degrees, a professor from one institution told a BFC member that of 200 graduates each year, only a handful would choose a career in construction. When asked, several students attending

the event reported that they saw the industry as “stodgy,” divisive,” and “lacking innovation or career potential.”

Does the industry’s checkered image match the reality? The answers are not always clear-cut. In some ways, the negative stereotype is earned, but in other ways, the new, emerging image is very positive. For example, in recent years, in an attempt to promote cooperation among all A/E/C industry partners, new project delivery systems have emerged. These include innovative techniques such as design/build construction. This bright spot is designed to deliver projects quicker, cheaper and with less risk. It puts A/E/C firms in cooperation, even collaboration, and in its best form, in synergy—all to support the needs and expectations of the owner, developer, and end user. Advocates of design-build say it is a more efficient method of combining design with “constructability,” which helps a contractor provide an intelligent range of cost and value options for the client. The practice has helped many firms remain competitive on ever-tightening margins, and the public perception of design-build is generally very positive, too. Design-build appears to be reversing the negative stereotype.

GLOBETROTTING, HARD HATS NOT FOR EVERYONE

While there will always be small contractors working local and niche markets, most A/E/C experts agree that there is a clear trend toward alliances and even “cooperation,” a strategy in which traditional competitors (such as two competing general contractors) will cooperate on a project when it best meets the needs of the customer. In the broader arena, there is also a trend toward consolidation, where bigger players can provide a variety of services under one roof. That “full-service” approach serves to reduce excess capacity in the marketplace, because bigger firms can use economies of scale to lower their financial risks.

An unintended consequence of the “bigger is better” movement, however, may be an increase in projects on a regional or global scale. As these firms seek to develop closer

relations with key customers, it will increase the likelihood that mid-managers in these construction firms will be away from home for extended periods of time. This is a trend that does not fit well with most Generation X workers (currently ages 26-41), and double income families, for whom “work-life balance” is not just a core value, but an expectation.

Most mid-level managers in the A/E/C field are comfortable moving from shirt and tie to hard hat and muddy boots. That is because construction architects, construction managers, civil engineers, and others have frequent onsite responsibilities during a project. But that variability of working conditions, combined with long hours and increasing amounts of travel, is a disincentive for some potential job candidates.

“A lot of work in the construction environment isn’t always inside where it’s warm and nice,” said Tom Sorley, president and CEO of Rosendin Electric in San Jose, California. “It’s often out in the middle of a field where the wind is howling and you’re tromping around in the mud. That’s a turnoff for some people, and a turn-on for others.”

LAGGING BEHIND CHANGING DEMOGRAPHICS

In its most recent construction industry training report, the management consulting firm FMI Corporation noted that 83 percent of all management or supervisory roles in the A/E/C industry were held by white, non-Hispanic men. Only eight percent of these roles were held by African-American, Asian, or Hispanic men—a leadership mix that current demographic trends suggest is not sustainable. While Caucasians currently make up about 80 percent of the U.S. population, the group has the most people over age 65 and the nation’s slowest birth rate.

In contrast, Hispanic and Asian populations in the U.S. are growing more than three times faster than whites, and the Census Bureau reports that, by 2050, the percentage of Caucasians and non-Caucasians will be about equal. Clearly, the industry needs to take

quick steps to source, identify, and recruit qualified minority professionals—or miss tapping into the fastest growing supply of talent in the foreseeable future. Perhaps it is important for the A/E/C industry to recall that just a few decades ago, it was an immigrant workforce that built much of the commercial, industrial, institutional, and residential buildings, the infrastructure of our nation. If it is a growing supply of talent we need, perhaps we need a more diversity-oriented industry recruiting approach.

Ethnic diversity, however, isn't the only demographic challenge. Construction businesses have not been effective in tapping women for leadership roles, despite a decade-long decline in the number of men pursuing college or university degrees. Today, women account for 57 percent of all students in higher education, and BLS reported that females now hold half of all management and professional jobs in the U.S. However, women held only nine percent of management roles in A/E/C businesses in 2005, according to an FMI study.

Ironically, female entrepreneurs have demonstrated that they can succeed in the A/E/C business when owning or leading the company. Between 1997 and 2004, the number of privately-held construction firms in which women owned a 50 percent or greater stake grew by nearly one-third, according to the Center for Women's Business Research in Washington, D.C. The growth rate in construction outpaced other women-owned ventures in industries such as transportation, communications, utilities, and agricultural services.

COMPETITIVE COMPENSATION? NOT YET

An A/E/C career often does not offer pay and job development opportunities comparable to other technical or business career paths. As a whole, the industry has been slow to embrace employee stock ownership programs (ESOPs), performance-based cash bonus incentives, or other forms of cash and indirect compensation available in other market segments.

For example, BLS reported that the median annual salary in 2004 for construction managers and electrical engineers was about \$70,000. The midpoint for civil engineers was about \$64,000, and salaries for architects came in at about \$60,000. By contrast, petroleum engineers had median salaries of about \$88,000, with nuclear engineers at \$84,000 and computer and aerospace engineers at about \$80,000. In addition to computer engineering, which BLS forecast will grow at a 15 percent annual rate over the next decade, the strong growth of the biomedical field is siphoning off a greater share of electrical and mechanical engineers.

On the non-technical side, top students with engineering, math, or science degrees are frequently recruited by large management consulting firms and the insurance/financial services field. Additionally, real estate management companies, which market and administer large portfolios of commercial property, have also stepped up recruiting of talented graduates with architecture, engineering, or construction backgrounds. These professions, judged on salary and bonus earning potential, generally offer a more lucrative career path with more predictable working conditions.

A BROAD VIEW OF TALENT MANAGEMENT BEST PRACTICES

ONE SIZE DOES NOT FIT ALL

The challenges of effective talent selection, development, and retention are by no means limited to the A/E/C field. As the economy gains steam into 2006, human resources experts project that labor markets will tighten across the board.

While there are scores of industries and individual companies that have developed strong talent management tools, it is important to recognize that no two situations are alike. In other words, a great approach to recruiting and retaining employees in one place may be a dismal flop in another—even within the same industry. Writing in *CIO Magazine*, author Robert Sutton offered this perspective on talent management best practices:

“The argument for adopting ‘best practices’ seems ironclad, at least on the surface. If you want your company to get better, look at what great companies do (or at least companies that perform better than yours), and then copy it. This assumption is so obvious that most management writers, consultants, software vendors and gurus don't even talk about it explicitly. They show you the differences, say, between firms that use Six Sigma, that fight the war for talent, that outsource IT or manufacturing, or that use their enterprise software, and those that don't, to ‘prove’ the value of their wares. This [so called] follow the leader strategy isn't outright wrong, but trying to be just like General Electric, Procter & Gamble, or whatever company you admire isn't as sound an idea as it might seem.”

In a landmark 2005 survey, the Society for Human Resource Management (SHRM) gained feedback from nearly 400 human resources executives in 18 industries on critical

talent management issues. According to those polled, the most important drivers for effective recruiting, development, and retention of key staff included:

- Building a deeper reservoir of successors at every level of the organization
- Creating a culture that makes employees want to stay with the organization
- Identifying gaps in current employee and candidate competency levels
- Creating policies that encourage career growth and development opportunities

With those points as a guide, it's appropriate to take a closer look at how some organizations outside of the A/E/C industry have addressed these issues.

Succession planning. Generally speaking, succession planning means identifying and developing internal talent who have the capacity to ascend to higher-level roles.

Excellence in this area can be achieved in a number of ways, including those implemented by the following companies highlighted in a 2006 *Workforce* magazine article:

- WellPoint, a large health insurance company, asks all staff at the director level and above to use a Web-based software tool to enter their educational background, what jobs they'd like a shot at and whether they'd be willing to move to various parts of the country. Then, supervisors are asked by HR to assess each individual's potential and approve all career development plans. Collaboratively, they also consider each individual's risk of leaving and the likely effect such a departure would have on the company. All of this information feeds so-called "talent calibration sessions," where company leaders focus on planning for departures as well as the development of up-and-coming leaders.
- Energy Utility Southern Co., on the other hand, made a simple timing change to improve its succession planning process. In 2006, the company is separating performance reviews, which take place at the end of each year, from succession

planning. Now, the consideration of future leaders occurs as a separate leadership conversation each spring.

- Auto parts and services chain Pep Boys improved its succession planning approach by installing a software tool that helps the company standardize performance reviews and share talent across divisions. The software cost about \$180,000 in its first year, but the company expects the technology to pay for itself through improving staff retention and upward opportunities. The report noted that external hires cost Pep Boys about \$20,000 each, while internal hires cost about half as much.

Creating culture. Until the 1970s, the phrase “corporate culture” had not really entered the business lexicon. But mergers, acquisitions, downsizings, and industry consolidations revealed a need for companies to use “culture” as a way to differentiate themselves for competitive advantage. In his book, *Organizational Culture and Leadership*, MIT professor Edgar Schein described it this way: “There is a possibility, under-emphasized in leadership research, that the only thing of real importance that [company] leaders do is to create and manage culture and that the unique talent of leaders is to work with culture.”

While there are dozens of companies that have cultural attributes that contribute to talent management, few can top the honest, systematic approach adopted by Continental Airlines in the mid-1990s. The company, which was on the brink of bankruptcy in 1994, staged a remarkable turnaround led by CEO Gordon Bethune. To convince employees that he was serious about improving profitability, working conditions, and customer/investor confidence, Bethune made five major cultural changes including:

- *Accountability.* In this step, all company executives and managers were made accountable for supporting the changes necessary to support a turnaround. Those who resisted the new direction—especially to maintain the status quo—were put on notice that such actions would not be tolerated.

- *Accessibility.* Unlike his predecessor, who was rarely seen by workers, Bethune did away with the traditional executive suite and made himself visible and accessible to workers at all levels.
- *Clarity.* Shortly after his arrival, Bethune developed a “Go Forward Plan” that outlined in plain English the key changes the company needed to make to survive. In a show of seriousness about the new plan, Bethune delivered hundreds of copies of the old Continental employee manuals—which had detailed rules for just about any circumstance—to a company parking lot and set them ablaze.
- *Rewards.* When key milestones in the new plan were met, employees were given defined financial rewards.
- *Communication.* As organizational successes grew, Bethune used stories to reinforce why Continental was not only a great place to work, but an increasingly viable business.

The deliberate effort to create a strong, open culture has paid handsome dividends. Today, despite sizable fuel cost increases, Continental remains financially sound and was ranked by *Fortune* magazine as the most admired airline company of 2005.

Identifying gaps. A 2004 “Workforce Agility” study by Convergys confirmed what many company leaders have long suspected: an increasing gap between business goals and skill development programs. In the study, 80 percent of senior executives said it was critically important for their firms to identify and retain their most skilled talent. However, only 20 percent of HR executives at those same firms said their companies had programs in place to do just that.

Writing in the September 2003 edition of *HR Magazine*, authors Steve Lindsey and Beth Patterson said effective skill gap identification and follow-up development can provide companies with a competitive talent advantage. To get there, they advise companies to

link internal or external skill building approaches with current and future business needs identified by leadership. To measure return on investment, Lindsey and Patterson suggest that any skill gap training be tracked on:

- *Cost.* The benefit must outweigh the cost. By compiling training-related expenses, an organization can determine the total cost for each training program by region, location, or employee demographic. This data can be used to demonstrate return on investment for individual training programs.
- *Usage.* By tracking employee completion and enrollment rates, a company can accurately measure program usage. The best training program in the world is useless unless measures are in place to ensure effective implementation.
- *Impact.* This step involves determining if employees apply what they learned in training, and whether or not training resulted in any specific behavior or performance changes in support of learning objectives. In a broader sense, company retention and promotion data, before and after a new training program is launched, could be measured to determine overall impact.

Improving career growth. Highly-regarded British management theorist Robert Heller advises organizational leaders to consider “career growth” in both vertical (promotion) and lateral (skill building) ways. This provides the opportunity to develop current and prospective management talent by testing their skill and problem solving in ways that add value to the company. Several examples Heller cited in a recent article on the *Thinking Managers* Web site included:

- At the U.S. manufacturing outpost of France's Thomson Electronics, the company built several cross-functional teams from the company's design, marketing, engineering, and manufacturing functions. In each team, individual members took turns as leaders while continuing to perform in their normal jobs. That improved each

employee's knowledge of the business, and resulted in a series of promotions for many of the participants.

- Similarly, a major paper products concern split responsibility for divisional product development and marketing decisions among five director-level staff members. Each director maintained a functional role in areas such as engineering, finance, or production, but the group needed to reach consensus before any decisions were finalized. Sales in that division grew 24 percent in one year, and the participants gained new insights on a wider range of issues facing the business.
- When S.C. Johnson Co. made an organizational change toward self-managed teams, the human resources executive took a small group of line staff and managers down to the factory floor to teach techniques like statistical analysis, time management, and “pay-for-skills.” A major outcome of this experience was productivity. For example, the time necessary to switch a line from liquid floor wax to stain remover came down from three days to 13 minutes, thanks to suggestions made by this group. As a result of this project, overall productivity in the plant went up by 30 percent. Participants, meanwhile, broadened their skills and prospects for advancement.

CURRENT BEST PRACTICES IN THE A/E/C INDUSTRY

SOME BRIGHT SPOTS, BUT THREATENING SKIES REMAIN

In the boom years of the 1990s, when labor markets tightened to record levels and demographers began to forecast a long-term decline in available talent, some A/E/C industry groups, educators, and individual businesses started taking steps to address the problem. However, veteran observers say most current approaches to talent management focus too much on technical needs and not enough on critical thinking and business decision-making.

“A lot of these outreach programs talk a lot about things like stresses, strains, and beam deflection but not a lot about management and leadership,” said Ralph Locurcio, a retired brigadier general from the Army Corps of Engineers who now teaches civil and construction engineering at the Florida Institute of Technology. “That doesn’t give students the big picture, and it tends to feed a perception of the profession as a place for ‘uncool geeks.’”

The industry has a number of training programs geared to production and trade workers, as well as some innovative outreach tools designed to spark interest among pre-teens. For example, as part of its *Construction Futures* initiative, the Associated General Contractors of America (AGC) launched a *Build Up!* program that provides interactive learning aids on the world of construction to fifth-grade students. Since its introduction in 1998, *Build Up!* has reached over one million learners.

Trade associations representing the broader A/E/C industry recognize that there is a shortage of recruiting, development, and retention approaches for management talent. To

counter that trend, the groups have designed and launched several outreach initiatives, including:

- **The ACE Mentor Program.** This initiative, founded in 1994 by the principals of several leading design and construction firms, strives to introduce high school and college students to career opportunities in the industry. Typically, member companies “adopt” 20-30 students during a school year as part of teams that handle a real design/construction project. Volunteers from each of the firms, serving as mentors, work directly with the students to introduce them to the broad range of people and projects within the industry. This program has been recognized for its success in motivating college-bound students to pursue professional education in architecture, engineering, or construction management.
- **AGC Advanced Management Program.** This week-long seminar is designed to equip current or prospective senior managers in mid to large-sized construction businesses with the skills necessary to successfully help their companies navigate today's competitive environment. For mid-managers, AGC also offers a three-day Leadership in Construction workshop designed to help participants hone their management skills.
- **American Society of Civil Engineers LEAD Course.** This eight-month program focuses on helping engineering managers build skills in leadership, communication, motivation, and change management. It includes seven formal training sessions and individual mentoring from LEAD faculty members. Enrollment is limited to 20 engineers, and all participants are expected to complete a personal career growth plan at the end of the course.
- **A residential construction superintendent designation program.** The National Association of Homebuilders (NAHB) launched this certification program as a way to help build skills for existing field superintendents or groom prospective talent for site leadership roles. To obtain the designation, candidates must master a range of core

competencies critical to a field supervisory job, such as project management, planning and scheduling, budget management, customer service, safety and security, building codes and quality control, hiring and supervision, and office/subcontractor relations.

- **An Education/Practice/Industry Connection.** This program, known as EPIC, is sponsored by the American Institute of Architects. It is a partnership between the architecture/design community and the larger construction industry, and it offers prospective and young architects access to mentoring, best practices, and continuing education opportunities. EPIC also strives to strengthen connections between the academic community and the industry.

Over the years, these industry offerings (and others not specifically mentioned) have had moderate success in generating awareness of career opportunities in A/E/C fields.

Meanwhile, many individual companies have also taken the “war for talent” into their own hands. Some interesting examples of those efforts include:

- **Kiewit Corporation.** Kiewit, a large construction and mining firm based in Omaha, NE, has a strong “promote from within” philosophy. As a result, most of Kiewit’s top leaders and managers are graduate engineers who have been with the company an average of 18 years. Over 40 percent of Kiewit’s 4,600 salaried employees hold company stock in an ESOP, and the firm provides substantial support for in-house and outside professional training. (www.kiewit.com)
- **The Louis Berger Group, Inc.** Berger is an international construction management firm with offices in the United States and 80 other nations. The company offers current and prospective hires a highly-competitive salary and benefits package, as well as tuition reimbursement, professional society registration, encourages employee publication of papers, advocates promotion from within, and pays bonuses to employees who refer new hires to the firm. (www.louisberger.com)

- **Perini Corporation, Inc.** Perini, based in Framingham, MA, is an international general contracting firm that is well-regarded for its corporate training programs, which include opportunities for managers to attend Harvard Business School. The company's pay and benefits programs are among the best in the industry, and a bonus plan rewards executives and managers who achieve or exceed targeted project results. (www.perini.com)
- **Washington Group International.** Washington Group, an engineering and construction firm based in Boise, ID, spends an average of \$50 million annually on employee development programs—a figure just shy of the company's net annual income. The results of that sizable investment? Net income per employee has increased 60 percent since 2002, applications from qualified job seekers have shot up 150 percent since 2002, and repeat clients now account for 95 percent of the company's overall business. For those accomplishments, the firm was recognized by Hewitt Associates as one of the top 20 U.S. companies for leadership development. (www.wgint.com)

Despite these bright spots, the industry still faces a stark reality: Too few new graduates are entering A/E/C professions, and too many of the industry's veteran leaders are at or near retirement. The blueprint to construct effective change, some observers believe, will require more than slogans and industry marketing. Company by company, it will require leaders willing to shift away from old practices toward more collaborative work environments that foster career development and reward results.

“I don't think a PR campaign is going to solve this problem,” said FMI's Hugh Rice. “I think the talent problem only gets solved one company at a time. Individual companies need to recognize that if they are going to survive and prosper, they need to attract and hold new people to their businesses—and to the industry.”

WHAT'S NEXT FOR THE INDUSTRY?

INACTION IS NOT AN OPTION

Looking ahead, it's easy to trace how the ripple effect of the industry's war for talent could help—or hurt—the overall U.S. economy. Consider, for example, what happens over the next 25 to 50 years if critical infrastructure—roads, bridges, dams, energy plants, sewer, and water systems—are left in disrepair. What happens if demand for new civil engineering projects outpaces the industry's ability to deliver? What happens if major domestic players slowly lose their ability to play lead roles in commercial construction projects around the world?

In short, what happens when there are not enough designers and builders left to go around? If that does happen, there are several potential consequences, including:

Increased industry consolidation. With the U.S. economy now seemingly back on its feet, and strong growth in China, India, and other global markets, the A/E/C industry is in a position to reap significant financial benefits over the next decade. However, many companies are already struggling to handle existing project loads, meaning that some will be forced to merge, downsize, or go out of business if they cannot meet future demand.

“In the short-term, companies with available resources have the opportunity to reduce risk and, hopefully, make some nice profits,” said Tom Sorley of Rosendin Electric.

“However, the lack of additional talent coming into the pipeline is constraining business growth. To some extent, that will cause current or potential customers to look at other alternatives—including overseas providers.”

Weakened ability to handle overseas competition. Like U.S. electronics companies in the 1980s and automotive companies in the 1990s, the construction industry is now

starting to feel the pinch from global competition. Over the past decade, the Milken Institute reported that many foreign-born, U.S. trained engineers are now taking their skills back home to launch “business clusters” in a variety of industries, including construction management. That trend has two ramifications for large domestic A/E/C firms: more foreign-based competition on large commercial and infrastructure projects, and a tighter market for available human, financial, and structural resources.

“We need to find ways to stay competitive with the low-cost operations in other parts of the world, while finding ways to manage the rising costs of our materials,” said Jack Chiaverini, a veteran of nearly 60 years in the construction business. “Look at the cost of steel, for example. It has gone up dramatically, largely because of the phenomenal appetite for new construction projects in China. The same thing is true for the cost of fuel. If we want to maintain our superiority in innovation and quality, and the ability to think outside the box, we need to do better at bringing in new people who will provide fresh thinking on issues like these.”

Management by crisis. A long-term talent drain, compounded by increasing numbers of veteran leaders who retire, will drive more companies to manage by moving from one fire to the next. This type of “management by crisis” will not enable the type of big picture thinking the industry needs to keep its leadership position, and it will not help individual companies to develop creative, flexible approaches to recruit and keep top talent. By managing in crisis, companies will simply focus on what is necessary to survive, not grow and thrive.

At the Florida Institute of Technology, Ralph Locurcio drew on his West Point training to integrate a leadership component into his engineering and construction operations coursework. Today, that leadership curriculum is mandatory for all undergraduate seniors and graduate students at FIT. “Our industry as a whole lacks leadership skills,” said Locurcio. “Civil engineers, for example, see their job as being experts in creating safe structures and buildings, not promoting what goes into making that happen or why it is

important. So, they defer to the political structure to advocate for the industry when, in fact, they are the best resources for taking on a bigger leadership role.”

BFC RECOMMENDATIONS

Seven Recommendations to the A/E/C Community

1) Increase public awareness of how A/E/C businesses positively affect quality of life. As previously noted, the general public takes for granted the commercial, industrial, and public works projects that enhance quality of life for millions of people. This could take the form of advertising or media relations campaigns to highlight regional/national/international projects—and how those projects affect local people and economies. The industry should improve its perception relative to the environment.

2) Promote a “Top 10” list of high-profile major national/international projects. This kind of list, which could feature current and recent accomplishments, could be marketed as an online educational tool to all colleges with A/E/C programs. It could also be marketed to the high school level, perhaps with the addition of online study guides to show how math, science, or other academic disciplines (such as economics or second languages) affect the successful completion of major construction projects.

3) Introduce multi-lingual information and recruiting tools. As the mix of new talent continues to become more diverse, industry Web sites and resource materials should reflect that trend by providing segmented information in other languages. Additionally, the major associations serving the A/E/C fields should play a greater role in seeking and publicizing “success stories” of firms that have done a good job of broadening their talent pool with ethnic minorities or women.

4) Continue and reinforce key educational outreach programs. For example, a current BFC program rewards doctoral engineering students for conducting research and development work on issues pertinent to the current or future construction environment. These programs add significant value to the profession, and should be sustained and enhanced. The industry needs to drive new engineering innovation.

5) Improve outreach to associations representing middle and high school leaders.

The A/E/C community would benefit from marketing a supervised “work release” opportunity for middle and high school students at local construction sites. This approach would help position A/E/C to students as a career option serving a public good. It also would allow the industry to reach a diverse pool of upcoming talent at a younger age.

6) Define and report on success metrics. As a whole, the industry lacks good data on how outreach efforts translate into future workers. For example, while it is well-documented that the AGC *Build Up!* program has reached over one million elementary school students, there appears to be no tracking tool to identify the career path those students ultimately followed. More “line-of-sight” tracking on how outreach affects career choice is needed to demonstrate return on investment.

7) Build an ongoing forum to discuss this issue. Associations service the A/E/C community—including the BFC—can play a bigger role in fostering regular conversation on the recruiting, development, and retention issue. This conversation would help the overall community learn from each other’s successes and failures, and help build dialog between company owners, executives, managers, and customers.

Four Recommendations to A/E/C Companies

1) Make succession and leadership development planning a strategic priority. Too often, these issues are pushed aside in favor of operational or financial problem-solving. While those issues are important, long-term talent management, especially in the face of changing demographic trends, is absolutely critical to ensure the viability of individual companies. If your strategic plan does not include a long-term human resources vision, including marketing, attraction, recruiting, orientation, development, recognition, compensation/rewards, and retention, then your strategic plan is incomplete.

2) Be open to change. In recent years, businesses in a wide variety of industries have needed to shift away from old approaches to talent management in the face of demographic and marketplace challenges. Construction cannot be an exception to this trend. To create a more attractive work environment, individual companies should review existing management and HR practices to see if they help or hinder current and future workforce needs. If it is the latter, the company needs to have the courage to develop and promote an environment focused on collaboration, professional development, personal accountability, and rewards for results.

3) Establish recruiting, training, and development programs that fit the company culture. Most management experts agree that understanding “culture”—the little, intangible elements that make one company distinct from another—is vital to career success. With that in mind, it is important to design training and development approaches that enhance not just hard business knowledge, but also soft “cultural knowledge.” For example, if your business has a time-honored way of approaching customers, projects, or career advancement, it would be wise to design orientation program for new hires that feature a senior executive talking about those issues in candid detail.

4) Build your company’s “brand.” Success in recruiting, developing, and retaining top talent doesn’t happen overnight. It happens when current and prospective employees see or learn about companies that play by the rules, encourage ongoing learning, demand accountability at all levels, and reward results. Companies that have done these things well have, in effect, an “employment brand” that tends to market itself via word-of-mouth in professional associations, colleges and universities, retired and former employees, and others who have had consistently good experiences with the firm.

Three Recommendations for You as an Individual in the A/E/C Industry

1) Be accessible. As an individual with a vested interest in the future of the A/E/C field, spend time mentoring and developing talent from within. While the technical and business sides of the industry are important to convey, consider teaching young and mid-level talent about issues in effective leadership—what has worked for you, what has not, and why.

2) Be visible. As a part of the broader A/E/C community, be willing to teach or mentor university or high school students considering careers in the construction profession. Studies show that most professionals can track their career decisions back to “critical conversations” they had with a trusted third-party mentor, family member, or teacher. Your visibility can make the difference for someone making key decisions about their future.

3) Be involved. As a leader in your firm, you have the position, tools, and authority to wage a more effective “war for talent.” If your company already has a great system and reputation for talent management, consider a proactive approach to sharing your knowledge at industry events, professional meetings, or informal gatherings with leaders of other firms. If not, consider the benefits of repositioning your company for long-term talent management success.

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