NOVEMBER/DECEMBER 2014

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## GENERATION NEXT

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8

16


22

## Features



## Cover Feature



## Departments

4



COVER PHOTO: C.J. BURTON

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# From ACEC to You

## How Millennials Will Change The Face of Engineering

When Bob Dylan wrote his iconic song "The Times They Are A-Changin'" in 1963, it quickly became an anthem for social change heralding the coming-of-age of Baby Boomers. Today, more than 50 years later, it is the boomers themselves and their successors, Gen Xers, who must change with the times to make way for Millennials.

Millennials, those born after 1982, are entering the workforce with life experiences and outlooks that are startlingly different from previous generations. They bring with them new expectations on workplace environment, peer interaction and compensation. They are "digital natives" who have never known life without computers, and they are fluent in the use of social media and cutting-edge technology.

Our cover story explores the impact Millennials will have on the engineering industry as they assume greater positions of responsibility (See page 8). A companion article features insights from Millennial engineers about how they can best contribute to their firms' and the industry's success (See page 12).

This issue of *Engineering Inc.* also includes an analysis of mergers and acquisitions from the seller's point of view and the potential advantages of being acquired (See page 16), as well as strategies to reduce costs amid the changing landscape of IT tools and services (See page 22).

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*Engineering Inc.*, Volume 25, Number 6 (ISSN 1539-2694), is published bi-monthly by the American Council of Engineering Companies (ACEC), 1015 15th Street, NW, 8th Floor, Washington, D.C. 20005-2605. Periodicals postage paid at Washington, D.C., and at additional mailing offices. Annual subscriptions are $24 for members (included in dues as a non-deductible amount); $45 for U.S. non-members; $65 for institutional subscriptions. Back issues are $15.

POSTMASTER: Send address changes to *Engineering Inc.*, c/o ACEC, 1015 15th Street, NW, 8th Floor, Washington, D.C. 20005-2605.


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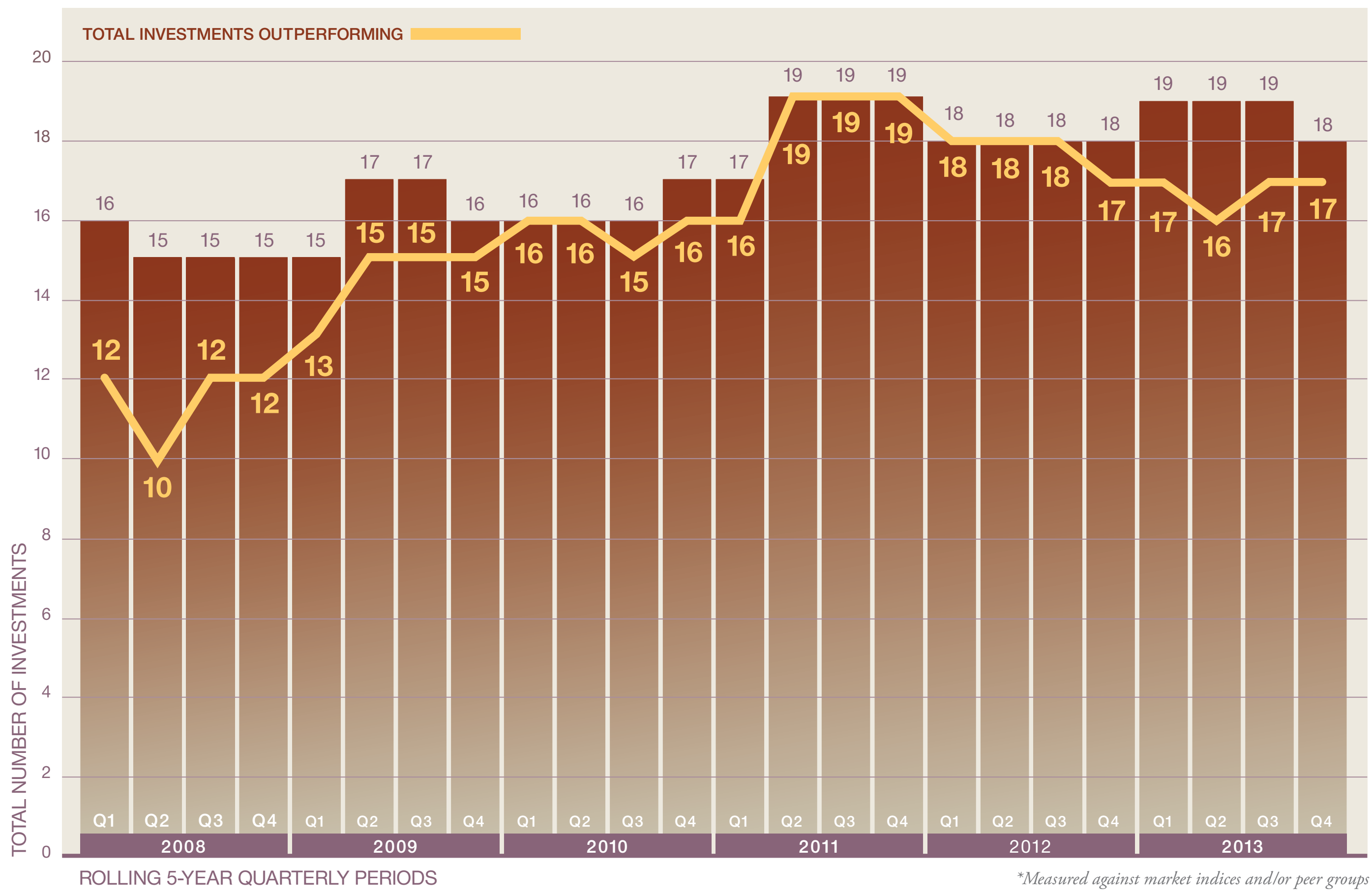


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## ACEC Engages Congressional Committee, White House on P3s

Several ACEC Member Firm representatives participated in hearings and listening sessions with a special panel of the House Transportation & Infrastructure Committee on public-private partnerships (P3s). The panel released a report with findings and recommendations for future legislation on surface transportation, aviation, water infrastructure, ports and waterways, and public buildings.

The panel reflected the Council's views by recognizing that P3s are an important financing and procurement tool, particularly for delivering complex, high-cost projects, but they are "not a source of funding and should not be thought of as the solution to overall infrastructure funding challenges." Only a small portion of infrastructure projects are well-suited for a P3, and sufficient funding through core programs is essential for modernizing our infrastructure systems.

The report includes recommendations for improving state and local agency capacity for structuring P3 agreements; breaking down barriers to consideration of P3s, particularly with federal financing programs such as the Transportation Infrastructure Financing and Innovation Act and Private Activity Bonds; balancing the needs of the private and public sectors; and ensuring transparency and accountability in the P3 development process.

ACEC will be following up with the committee on what the recommendations might mean for future legislation, including MAP-21 reauthorization.

Several ACEC Member Firm representatives also participated in an infrastructure investment summit hosted by the Treasury Department in conjunction with the Department of Transportation in early September. The event brought together industry and finance experts with state and local agency officials to advise the Administration and develop strategies for facilitating public-private partnerships and advancing innovative financing mechanisms.

JERRY DRIERDL / GETTY IMAGES

## Congress Clears Continuing Resolution; Extends Ex-Im Bank

Congress passed a "continuing resolution" prior to adjourning to maintain current spending levels for federal agencies through Dec. 11 and extend the Export-Import (Ex-Im) Bank through June 30, 2015.

The legislation sets spending levels at the current annual rate of $1.012 trillion. Action on the continuing resolution was necessary because Congress failed to clear any of the 12 regular appropriations bills to fund government agencies and critical programs. Congress will return following the election in November to act on the stalled appropriations measures or pass a longer continuing resolution.

The extension of the Ex-Im Bank is a critical priority for ACEC because it is an essential source of financing for many firms competing for work overseas. The Bank's charter was set to expire at the end of September, which prompted ACEC to pressure Congress to act.

# House Votes to Block EPA Proposed Wetlands Expansion

ROBERT NICKELSBERG/GETTY IMAGES

The House voted to block a controversial EPA regulatory effort to expand federal jurisdiction over wetlands.

EPA's proposed rule would broaden the scope of protection for "waters of the United States" to include all traditional navigable and interstate waters, as well as upstream tributaries, adjacent wetlands and other waters with a "significant nexus" that could impact the chemical, physical or biological integrity of those waters. The agency contends that scientific studies have demonstrated the nature of hydrological connectivity and effects of streams and wetlands on downstream waters, thus justifying their inclusion.

Homebuilders, commercial developers and energy groups oppose the proposed rule, contending that it goes too far in extending federal jurisdiction.

While the Senate is not expected to take up the measure this year, the continued controversy could spill over into 2015, particularly if the Senate majority changes hands.

# Tax Extenders Await Lame Duck

Congress left for the fall campaign without taking final action on the tax provisions that expired at the end of 2013.

The House has approved several bills to make particular tax provisions permanent. These include the R&D tax credit, small business expensing, a provision to make it easier for S corporations that were previously structured as C corporations to access the firm's capital without tax penalties, and bonus depreciation for purchases of new equipment by firms of all sizes. However, the House has not taken action on the entire package of expired tax provisions.

The Senate Finance Committee approved a two-year extension of a package of tax credits and deductions. They would be in effect for 2014, retroactive to Jan. 1, and in 2015. Senate floor consideration was not completed because of procedural hurdles.

It is expected that tax extender legislation will be considered during the lame duck congressional session following the elections. The final product is likely to look more like the Senate Finance bill, but the possibility remains that it could permanently extend a couple of provisions.

| ISSUES ON THE MOVE | WHAT'S NEXT |
|---|---|
| FY'15 agency funding package | Further action when Congress returns in November |
| Extending expiring tax provisions | Action expected November/ December |
| Export-Import Bank reauthorization | Further action expected first half of 2015 |
| Preserving cash accounting option | Further action possible in early 2015 |

# Majority of House Members Back ACEC on Cash Accounting

An aggressive grassroots campaign led by ACEC has secured the support of a majority in the House—233 Representatives—to preserve the ability of firms to use the cash method of accounting.

The Council and its coalition allies are working to influence lawmakers in advance of congressional consideration of comprehensive tax reform legislation, which could occur in 2015.

The House effort was centered around a bipartisan letter authored by Reps. Blaine Luetkemeyer (R-Mo.), Mike Quigley (D-Ill.), Richard Hudson (R-N.C.), and Bradley Schneider (D-Ill.), which expressed strong opposition to pending tax reform proposals that would limit the use of cash accounting to firms with less than $10 million in revenues and sole proprietors. This change would impose significant cash flow problems on many ACEC Member Firms because the vast majority of their costs are labor-related and must be paid before firms are paid by their clients.

Sens. Sherrod Brown (D-Ohio), Pat Roberts (R-Kan.), Angus King (I-Maine), and Ron Johnson (R-Wis.) led a similar effort in the Senate, where 46 Senators registered their opposition to the idea of restricting the use of cash accounting.

MITCHELL LAYTON/NHLI VIA GETTY IMAGES

**Rep. Mike Quigley (D-Ill.)**

AP PHOTO/TOM GANNAM

**Rep. Blaine Luetkemeyer (R-Mo.)**

## For More News

For weekly legislative news, visit ACEC's *Last Word* online at www.acec.org.

BY GERRY DONOHUE

# Solar Power Heats Up as Pricing Divide Narrows

For most of its history, solar power has been the technology with the big "but," as in "Solar power is great, but it's too expensive" or "We'd love to install solar, but it's not cost competitive."

Despite its many benefits, solar power remained a periphery power source because it couldn't bridge the pricing divide—until now.

In the past few years that dynamic has dramatically changed, thanks to a combination of federal and state incentives, improved technologies and rapidly falling component prices—the cost of crystalline silicon modules has decreased 80 percent since 2008.

"In markets with high energy costs, such as the Northeast, certain parts of the West Coast, and Hawaii, photovoltaic [PV] solar systems are extremely competitive for everyday electricity," says Tetra Tech Senior Vice President Craig MacKay, who leads the firm's electric generation practice. "And in a lot of other markets, the gap has narrowed."

As a result, solar power installations have soared. According to GMT Research:

- Solar power accounted for 74 percent of all new electricity generating capacity installed in the U.S. in the first quarter of 2014.
- The 6.6 gigawatts of photovoltaic solar power projected to be installed in 2014 is an increase of 39 percent over 2013 and almost double the market size in 2012.
- The 340 megawatts (MW) of concentrating solar power (CSP) scheduled to come online in 2014 marks the largest single year for CSP installations.

Despite the recent growth, solar power remains one of the smallest segments of the U.S. power industry, contributing just 1.13 percent of U.S. power generation. According to analysts, three key market forces need to play out just right for the market to continue its breakneck growth pace.

## Public Incentives

Solar power market growth has been largely dependent on financial incentives from both federal and state governments. The federal 30 percent investment tax credit (ITC) for residential and commercial solar systems began in 2005 and was extended in 2008 for eight years. At the end of 2016, the incentive is scheduled to drop to 10 percent.

Analysts differ on the impact of that looming change.

"It will be similar to what the wind industry saw with the Production Tax Credit expiration, a little bit of a cliff, if you will," says Tom Dodson, AMEC vice president of renewables/transmission and distribution. "It may take six months or a year for the pipeline to replenish itself, but long-term, solar will be a key part of the U.S. energy portfolio, even without the 30 percent incentive."

Gretchen Dolson, solar and wind practice leader at HDR, says that while the ITC has been important for the industry, "It is not the end-all-and-be-all. Our most successful clients are the ones who have mastered the state incentive system. That's where they're making their bottom lines."

Twenty-nine states have renewable portfolio standards that require specific amounts of clean electricity to be consumed each year. In several states, these goals have prompted significant solar investment.

According to a recent report from the California Public Utilities Commission, the state is on pace to meet its goal of generating 33 percent of its electricity from renewable energy sources by 2020. Solar is a big part of that effort—of the 1,330 MW of PV installations nationally in Q1 2014, California accounted for 959 MW.

States not historically connected to solar are also getting into the act. Georgia Power recently announced it will develop 540 MW of solar capacity. In 2013, Minnesota mandated that solar power must generate 1.5 percent of electricity in the state by 2020.

Because of the benefits of clean energy generation, most analysts expect more states to institute RPS systems, and those that already have them to raise the targets.

And, says MacKay, "While the future of the ITC is still to be determined, the industry is hopeful that it will be renewed."

## Tariffs and Charges

What the government gives with one hand, it takes away with the other.

In response to U.S. solar panel manufacturers complaining about unfair pricing practices by Chinese manufacturers, the U.S. government has slapped tariffs on imported materials, ranging from 23 percent to 35 percent.

"These tariffs are creating unnecessarily high pricing for panels," says Dodson. "As an industry, we are constantly being challenged to bring the price down, and the module cost is a key piece of what we're trying to do."

The U.S. Commerce Depart-

### Net Generation from Solar Power
(Thousands of Megawatt Hours)

| Year | Megawatt Hours |
|---|---|
| 2004 | 6 |
| 2005 | 16 |
| 2006 | 15 |
| 2007 | 16 |
| 2008 | 76 |
| 2009 | 157 |
| 2010 | 423 |
| 2011 | 1,012 |
| 2012 | 3,451 |
| 2013 | 8,327 |

Source: U.S. Energy Information Administration

### Top 10 States' Cumulative Solar Electricity Capacity
(Megawatts)

| State | Megawatts |
|---|---|
| California | 5,661 |
| Arizona | 1,821 |
| New Jersey | 1,211 |
| North Carolina | 557 |
| Nevada | 450 |
| Massachusetts | 442 |
| Hawaii | 341 |
| Colorado | 331 |
| New York | 250 |
| New Mexico | 236 |

Source: Solar Energy Industries Association ment is scheduled to decide in December on a new round of tariffs that could boost the cost of Chinese panels by an additional 15 percent.

At the same time, utilities in several states are looking to levy charges on residential customers who have solar installations and are selling power back to the grid. The utilities claim that these "net-metering" programs upset their business models, because solar customers aren't paying for the additional costs they are forcing on the system.

At the beginning of 2014, the Arizona Corporation Commission enacted a $0.70 per kilowatt surcharge on residential solar customers who sell electricity back to the grid. For the average sized residential system, that amounts to an additional $4.90 per month. The state utility had sought a fee of $100 per month.

Several other states are considering levying similar surcharges, including California, Colorado and Wisconsin. Many analysts are concerned that these charges could have a dampening effect on the solar market's growth.

"Net metering has been a good force for the industry, bringing in alternative financing and ownership structures," says Steve Campbell, Tetra Tech East Coast solar development lead.

## Storage

Solar power's upside will be constrained as long as it remains an intermittent power source. If researchers develop an effective storage battery solution, however, solar could become baseload.

"That would be a 'Black Swan' game changer," Dolson says.

According to a recent report by Lux Research, the energy storage market could top $50 billion by 2020, up from $32 billion today. The majority of the market, however, is projected to be in consumer electronics ($27 billion) and transportation ($21 billion).

For the power industry's storage market to take off, the report says the market needs to overcome technological limitations and pushback from the utilities.

"If they actually figure out a residential battery, it will change how utilities do business," Dolson says. "People will truly be able to go off the grid."

She is cautiously optimistic that a solution will be found. "There are a lot of talented people who are working on the battery issue. I hope I am wrong, but I think it will take longer than they think it will."

*Gerry Donohue is ACEC's senior communications writer. He can be reached at gdonohue@acec.org.*


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# The Next Generation

By Samuel Greengard

## Millennials bring new perspectives and challenges as they enter the business mainstream

C.J. BURTON

It's no secret that today's workforce is undergoing fundamental change. A growing number of Baby Boomers are heading into retirement, Gen Xers have grabbed the reins to the enterprise, and Millennials—the oldest of whom are now in their early 30s—are moving into the business mainstream, including at engineering firms.

Navigating this personnel change is a challenge. Millennials possess unique attitudes about life, work and technology. In many cases, this group—born between 1982 and the early 2000s—is driven by different motivations in comparison to preceding generations. It's critical that employers understand how their skills—heavily rooted in technology, activism and collaboration—can play an important role in organizational success. >>

How should A/E/C firms approach Millennials? How can they best recruit, hire and manage them? And what is required to keep them engaged, whether the task is overseeing a basic project or managing others across an organization?

"Millennials require a somewhat different approach," says Chuck Underwood, author of *The Generational Imperative* and founder and president of a consulting firm that trains corporations in generational workplace strategy. While there's no template for success, there are ways to leverage the skills and knowledge of this group and effectively integrate them into the workplace. "In many ways, Millennials possess strong thought-leadership skills that can define a company," Underwood says. "However, many are already struggling with the people leadership side of the equation."

## Generations At a Glance

**Silent Generation (1925–1945).** These people experienced the Great Depression and World War II. They represent a sliver of the overall workforce and focus heavily on job security.

**Baby Boomers (1946–1964).** Coming of age during the peace and love era, many boomers rejected traditional values and believed that they could change the world. Overall, they prefer to hold a job longer than Gen Xers or Millennials.

**Generation Xers (1965-1981).** This group grew up in an era of massive technological change. They are less idealistic, more innovative and entrepreneurial.

**Millennials (1982–2000).** Impacted by the Internet and terrorism, these individuals are idealistic, passionate, empowered, engaged and committed to social activism. At the same time, they can be needy and possess unrealistic expectations about job advancement.

### Who They Are

An important starting point for understanding Millennials is that they share many of the same core values possessed by boomers. "Both generations are idealistic, ethical, empowered, engaged and eager to use their careers to make a difference," Underwood says. "They aren't interested in just getting a paycheck and going home." This means that, among other things, Millennials prefer to work at a company where they can engage in meaningful work and make a difference in the community. Many also want their employers to project environmental responsibility and corporate citizenship.

"There is sometimes too much of a focus on texting and communicating in an informal way."

ANNE HARNEY
COLLINS ENGINEERS

But Millennials diverge from older colleagues in important ways. Many younger workers have watched the employer-employee compact disintegrate as companies hire and lay off workers. This has created a lack of trust. "As long as employers consolidate offshore, reduce their workforce and show very little loyalty to employees, Millennials will display very little loyalty back," Underwood says. "They have their résumé ready, and they are constantly shopping online for a better and more secure position."

Work-life balance and flextime are important to Millennials and younger staff. They are often attracted to firms with flexible work policies, including telework and work-at-home options.

Access to technology is imperative. Many Millennials choose to work at companies that provide access to the latest and greatest software and digital tools, says Robert C. Drexler, principal of Robert Drexler Associates, Inc., an executive search firm for engineering professionals. This includes a desire to work in a "bring your own device" environment, in which companies encourage employees to use their own personal mobile devices—smartphones, tablets and laptops—at work.

Studies have shown that two-thirds to three-quarters of Millennials choose employers based on available technology. This group—often referred to as "digital natives" because they've never known life without a computer—uses technology in a different way than their older colleagues. They gravitate toward collaborative tools—social media, geo-location services, instant messaging and text messaging—to navigate the daily workload. "The telephone is often the device of last choice for them," Drexler says.

### Handle With Care

Not surprisingly, differences in generational attitudes and use of technology sometimes make Millennials tough to manage, especially in firms with predominantly older employees.

Millennials feed off of praise and recognition. Many of them expect to advance early in their careers. They have a reputation for thumbing their nose at antiquated IT policies and using nonstandard applications to work faster and more efficiently.

"They aren't interested in just getting a paycheck and going home."

CHUCK UNDERWOOD
THE GENERATIONAL IMPERATIVE, INC.

There's a prevailing attitude that rules, and policies are only meant as guidance. This perspective can often lead to conflict—particularly with less technologically sophisticated boomers.

"Conventional thinking has always been that the younger workers adapt to the tools and systems an organization already has in place," says Andrew McAfee, associate director of the Center for Digital Business at the MIT Sloan School of

Management. “But this business model no longer applies. The rules are being rewritten on the fly.”

Developing a strategy and mapping out a plan for managing Millennials is paramount. It’s critical to approach the task with an understanding that younger workers can benefit an organization in a major way. They can drive innovation, aid in technology adoption and facilitate a team-oriented approach, all of which are important in today’s changing business environment.

**Bringing Them Onboard**

Recruiting, hiring, training and retaining Millennials requires organizations to approach human resources tasks in fundamentally different ways. Millennials are comfortable creating LinkedIn profiles and perusing online job sites. They use more informal communications. In the engineering field, Drexler says, “the best recruiting often takes place in the traditional way. It’s about calling people who aren’t necessarily job hunting but are happy to have a discussion to see if there’s a better opportunity. It’s important to be literate in online tools but not abandon conventional recruiting.”


C.J. BURTON

Retaining talent often comes down to offering the right perks and benefits. In addition to making the best technology readily available, an organization must build a team-oriented environment, emphasize work-life balance and flextime, design work around meaningful tasks and new challenges, and provide ongoing acknowledgment and support, often through recognition and awards. Training programs—including mentoring and reverse mentoring—are often a boon for younger workers, and they can also benefit older professionals.

Firms must focus on social media—within the organization and for external-facing tasks, including recruiting. Sharing information and connecting to expertise through social business platforms, blogs or wikis can aid a company in retaining knowledge—particularly as older professionals retire.

It’s also vital to educate Millennials about the organization’s core values and brand message. Remember, Millennials are online all day every day. Without the proper education and training, they could wind up sharing proprietary information or tweeting inappropriate comments about the company or its work.

At Collins Engineers, a 220-employee firm with 13 U.S. offices, Anne Harney, vice president of human resources, focuses on several core areas when recruiting younger employees: work-life balance, developing innovative training programs (including “Lunch and Learn” sessions), and deploying technology in a broader way.

She’s also adamant about retaining traditional processes and approaches. For example, “There is sometimes too much of a focus on texting and communicating in an informal way,” she says. Some candidates rely on instant messaging or texting in lieu of a formal introduction or cover letter. “It’s a flat-out disqualifier for us,” Harney says.

In the end, Underwood believes that it’s crucial to understand generational differences and balance the needs and desires of each group—boomers, Generation Xers and Millennials. “Millennials are a savvy generation,” he says. “If you present the facts, they will understand them. You don’t want to bend over backward, but you do want to accommodate them. They’re cocky, they’re sassy and they believe they are going to change the world for the better. They have a lot to offer a company.” ■

*Samuel Greengard is a business and technology writer based in West Linn, Ore.*

## 5 Tips for Effective Millennial Management

1. Provide cutting-edge tools. Millennials grew up with technology, they like technology, they know how to use it and they choose their employers as a result.

2. Offer ongoing training. In addition to technical knowledge, conduct cultural training to improve communication and integration with others who are less tech savvy.

3. Create a transparent environment. Focus on communication to keep Millennials informed about and engaged in what the organization is doing and why it matters.

4. Recognize performance. Design programs, such as newsletters and banquets, that celebrate achievements. Offer rewards and special perks for contributions.

5. Provide meaningful work. Ensure that Millennials feel challenged and that they’re making a strong contribution. Otherwise, they’re likely to look for another employer.


**E.J. Barben**
**Gannett Fleming**

By Maureen Conley

# Meet the Millennials

## 5 young engineering professionals reveal what makes them tick

Millennials often get a bad rap. This group of people, born in or after 1982, is the first generation to grow up in a world in which personal computers have always existed. They are often portrayed as glued to their smartphones, uploading selfies to the cloud and tweeting every moment of their lives. They're comfortable with technology, and that ease serves them well as they seek to fill the talent void created by retiring Baby Boomers. >>

But the changing workforce has created challenges for engineering firms striving to accommodate and empower a new breed of employee, many of whom have different values and perspectives on life and work.

To get a sense of who these new employees really are, *Engineering Inc.* reached out to five up-and-coming young engineering professionals, who are part of ACEC's Emerging Leaders Forum. Smart and highly motivated, these tech-savvy designers are fueled by drive, creativity and comfort with collaboration. Here they talk about who they are, what they've learned and where they're headed.

## E.J. Barben, 31

**Geotechnical Engineer**
**Gannett Fleming**

"I like problem-solving. And I was one of those kids that always played out in the dirt," says E.J. Barben, resident engineer at Gannett Fleming, who is currently working on a dam rehabilitation project. "As a geotechnical engineer, my medium is soils." Barben says he entered the field brimming with confidence, but "after some humbling experiences" he came to value the importance of veteran knowledge.

Millennials, despite having much to learn, offer unique qualities and talents that could benefit aging firms, Barben says.

For one, younger workers tend to be more enthusiastic and social. They often don't have kids to tie them down, so these employees have greater flexibility to go out and network. Barben says he's able to call upon contacts with different expertise when issues arise and those relationships sometimes lead to new business opportunities for the firm.

As Millennials take a more central role at engineering firms, Barben foresees a faster-paced business climate, fueled by a generation known for "checking their cellphones every 10 seconds." His prediction: All of this could eventually lead to an even more "competitive, cutthroat industry with budgets and schedules becoming tighter."

Despite being early in his career, Barben says he feels a responsibility and a duty to help grow the industry and continue to move it forward. "Like it or not," he says, Millennials are the leaders of tomorrow.


Taryn Juidici
OHM Advisors

## Taryn Juidici, 32

**Project Engineer**
**OHM Advisors**

Like many in the industry, Taryn Juidici hails from an engineering family. Her maternal grandmother was part of a prestigious group, the Curtiss-Wright Cadettes—800 women recruited into engineering programs at universities throughout the country during World War II. "It was the first real shot to prove girls could do engineering," she says of the cadettes. "A lot more made it all the way through than they expected."

E.J. Barben
Gannett Fleming

Juidici began interning with a consulting engineer the day after high school graduation. She worked summers in the industry throughout college. Younger engineers often enter the workforce with a significant amount of leadership experience, usually acquired through clubs, internships and extracurricular activities, and Juidici senses frustration among some of her peers who expect to move faster up the management ladder.

Juidici appreciates that more firms are embracing benefits such as work-life balance, including part-time employment, job sharing and flexible work hours. As a young person, she says such policies are "important to the industry's retention and recruitment efforts."

Juidici believes Millennials have a lot to learn—and they're willing to do so. She plans to absorb as much knowledge as possible from her boomer colleagues and says those experiences will provide a strong foundation on which to "further embrace the realities of our time—technology, green design and sustainability"—as her career advances.

## Jason Webber, 29

**Civil Engineer, Project Manager**
**Kimley-Horn and Associates**

Jason Webber became interested in engineering through his stepfather's work in

Jason Webber
Kimley-Horn and Associates

contracting. “I started doing auto-CAD in high school, had a surveying job over the summer, realized I liked it and kept going,” he says.

Webber sees Millennials as being able to bridge the gap between boomers and the most recent college graduates.

“My job is to build people up to do what I do now, so I can go on to doing bigger and better things,” he says. “My biggest influence will be training up all those young engineers to be more influential themselves.”

He believes different generations approach work-life balance in different ways. Younger staffers place more emphasis on keeping their evenings and weekends free, he says, while older workers tend to focus on work.

Webber says Millennials, despite having other interests on their plate, are willing to seek out the training necessary “to enhance their leadership skills” and to be “ready to lead.”

## Thuha Nguyen, 38

**Owner/Entrepreneur**
**via planning, Inc.**

Thuha Nguyen, who is slightly removed from the Millennial generation, but still among the industry’s youngest up-and-comers, says family connections had nothing to do with her decision to enter the field. “Engineering actually chose me,” she says. Her original college plan was art school with a major in fashion design, but the risks were too great. “I could be the next Vera Wang, or nobody.”

Nguyen chose instead to go with what she knew, “math and science.” She earned her bachelor’s degree in mechanical engineering, which allowed her to use her creativity and love of design.

Before branching out to launch her own planning and design firm, Nguyen worked as an associate engineer for Kittelson & Associates, Inc. She says the industry doesn’t often get the respect it deserves. In South America, engineers, similar to doctors, are addressed with courtesy titles. But that’s not the case in North America.

Nguyen believes Millennials are motivated by social obligation. She feels her generation has “a responsibility to improve the life of people living in our community and make the world a better place.”

Thuha Nguyen and CBS news anchor Bob Schieffer at 2014 ACEC Annual Convention

As for the industry, she says it’s “changing fast.” To attract and retain talented young engineers who want it all, companies need to “listen to us a little more and understand what it is that will keep us happy where we are.” Millennials are selective and willing to wait it out to find the right job. “We can live in our parents’ basement for a while,” Nguyen says. “We don’t get married as much. We have a lot more small condos than big houses, and a lot more dogs and cats than kids.”

## Scott Epstein, 33

**Environmental Scientist**
**Pinyon Environmental**

Scott Epstein manages the transportation group at Pinyon Environmental. He says teamwork is what gets him out of bed in the morning. “I don’t think most people realize when they look at a stretch of roadway, a building or a sidewalk the number of different individuals that have to touch that project—different experts with different skills and strengths—it literally takes a team to successfully complete a project,” he says. That’s not something they teach you in school.

Scott Epstein
Pinyon Environmental

“Engineering is about solving problems. If everyone has the same point of view or thinks it has always been done this way so this is how it’s going to continue, you may not get the best solution,” says Epstein, who believes Millennials look at challenges differently.

Knowing the way Millennials work, Epstein says the traditional nine-to-five workday will increasingly fall by the wayside. He suggests that engineering firms look at other industries to better understand “how to attract the new generation, whether it’s by remote working, unique and creative office spaces, or something else. For the industry to survive, it needs to recruit the best people,” he says. ■

*Maureen Conley is a business and technology writer based outside Washington, D.C.*

By Alan Joch

# What a Deal

## How can you make your firm more attractive for a merger or acquisition?

2014 is shaping up to be the year of the deal. The pace of mergers and acquisitions (M&As) is at its highest level in seven years, reaching $786 billion in the first half alone, according to Dealogic, a research firm that follows M&A activity. That's more than $300 billion higher than all of last year. Fueling the urge to merge is a potent combination of low interest rates, ample cash reserves and growing confidence that the U.S. economy will continue to grow. >>

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"It is becoming a hot market again as larger engineering firms look for strong midsized and smaller firms for acquisition targets," says Michael Strogoff, principal at Strogoff Consulting, which advises design professionals about M&As and related areas.

This represents a change from the recession when big companies scouted distressed firms available at discount prices. "Now that the economy is picking up, buyers are evaluating firms for more strategic reasons," Strogoff says.

M&A experts say an emphasis on deals has created a seller's market for private engineering firms that can demonstrate solid financials, attractive market niches and top talent. In such an environment, a buyout not only creates a lucrative payday for stakeholders, but also opens up professional opportunities for staff and ensures the long-term health of the firm's operations. The key is to attract the right buyer and successfully navigate the lengthy deal-making process.

"If you can demonstrate consistent profitability and rising revenues, a buyer will feel more comfortable about taking a risk with its investment capital."

NICK BELITZ
MORRISSEY GOODALE

### Now's the Time

Industry analysts say the best time to sell a company is during a growth period for revenues and profits, which, ironically, may be when executives want to focus on growing the business. But that hesitation can be costly. "You're then trying to time the market, which is difficult to do," explains Nick Belitz, principal consultant and head of Morrissey Goodale's buy-side merger and acquisition practice. "If you wait too long, you'll be in a position of weakness when you do finally go to market."

As Baby Boomers continue to retire in record numbers, another reason to sell might be the lack of a clear succession plan. (See sidebar on page 20.)

Another reason might be personal. A company executive might want to get out of the boardroom and back in the field. "Some executives believe they'll be happier focusing more on projects and engineering and less on financial management and administration," Strogoff says.

### Develop a Strategy

When the time is right to sell, stakeholders should have a plan for successfully marketing the firm. Send out feelers to colleagues or hire investment bankers or M&A consultants to help manage the process. In the early stages, anonymity is important. "Sellers do not want to have it out on the street that they are looking for buyers—that can be the death knell for a firm," says Strogoff. "Clients get anxious, the staff gets anxious and competitors get opportunistic."

A good initial step is to work with a consultant who is experienced in the engineering space to create a book that highlights the seller's strengths and what makes the firm attractive to potential buyers, says Bill Mandel, a partner at Fox Rothschild, a law firm that specializes in mergers and acquisitions for engineering, architecture and design firms. "These books, which don't mention the seller by name, will be circulated to target buyers identified by the consultant," he explains. "The profiles spell out what sector the firm is in and what its numbers look like, with the goal of determining who is interested in learning more about the firm."

Buyers are often attracted to acquisition candidates that can deliver clients in new geographic areas or provide business or technical expertise that would be beneficial throughout the buyer's organization. They're also interested in retaining key talent. "Buyers will often dictate that a portion of the purchase price consideration goes to key people, even though they're not equity owners," Mandel says.

Before formal meetings with potential buyers occur, it's important for firms to get their finances in order. Make sure accounting records are up-to-date and supported by hard data. "If you can demonstrate consistent profitability and rising revenues, a buyer will feel more comfortable about taking a risk with its investment capital," says Belitz.

Sellers should be prepared to answer tough questions. If the firm has endured financial struggles in the past, owners should be able to explain why and what's been done to correct the problems. Similarly, buyers will likely ask about the status of current or pending projects for the next six months to a year. "Having all of that information neatly organized and ready to go will give you a leg up on the other sellers in the market," Belitz explains. "You'll be able to speak with confidence about your business and about your overall financial picture."

### Find the Right Fit

Sellers want to burnish their image to attract potential buyers, but not every suitor will be suitable. Cultural compatibility is a primary factor in determining the success of an acquisition. "I always tell sellers that if a buyer wants to see the financials first, run in the opposite direction—as fast as possible," says Strogoff. "The best types of buyers are those who are interested

## 5 Reasons to Do a Deal

1. Merging with a larger company would provide professional management expertise for long-term success.
2. The firm needs an infusion of capital and expanded market opportunities.
3. The senior management team will be nearing retirement in the coming years, and there's no clear succession plan in place.
4. The economy is in an upswing, which means sellers can command higher prices compared with when orders start declining.
5. Owners have an opportunity for greater job satisfaction by returning to their engineering roots after years of focusing on management and administrative challenges.

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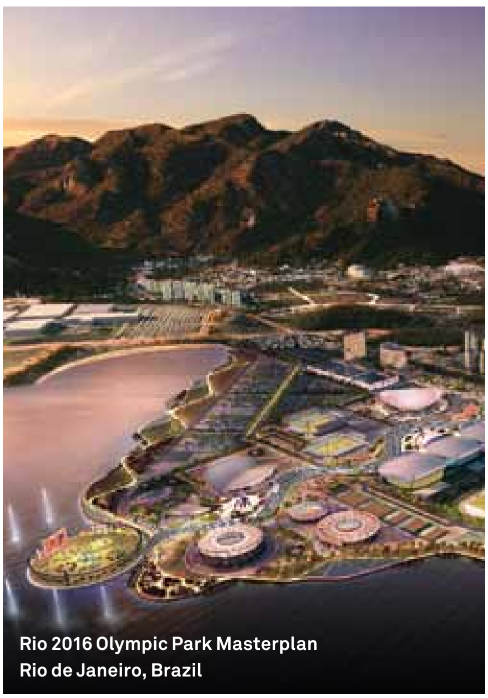

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South Africa

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## In Succession Planning, Timing is Everything

A number of engineering firms that are ripe for a merger or acquisition have something in common: leaders who are Baby Boomers. With retirement looming, these executives must contemplate exit strategies.

"Our expectation is that we are going to see more sellers coming into the market over the next year, driven by the Baby Boom generation thinking about retirement," says Nick Belitz, principal consultant at Morrissey Goodale.

In some cases, this group doesn't have a succeeding generation interested in taking the helm. In other cases, future leaders don't have the professional management expertise required for today's challenges. Whatever the catalyst, the decision to sell can be gut-wrenching. "One hundred percent of the families I have seen go through the process of selling their business have encountered a lot of anguish," says David Harding, leader of Bain & Company's global M&A practice. "There are often two camps: one that says, 'Let's somehow keep the business in the family' and a second that says, 'Times are changing; we need to change with them.' I'm sure that conflict goes back to biblical times."

Timing is another factor in succession planning. Mergers become viable succession strategies if they're closed well before the current generation of leaders retires. "The most important thing is to not sell your firm when you have one year left to work," Belitz points out. "In this industry, buyers want the owners to stick around for a period of years to transition relationships with customers and employees. If you try to sell with one year left, you are essentially playing with scared money in a poker game, and that's not a strong hand to play."

in the firm because of strategic marketing reasons."

Finding the right fit requires in-depth discussions over several meetings among key executives at each company. Discuss respective professional goals and business strategies as well as the core strengths and values of each firm. This process can take six to 12 months, according to analysts.

Ultimately, sellers must decide if the firm will be better off financially if it's part of a particular organization, or whether another buyer offers a better opportunity.

"With professional service businesses, different firms are worth different amounts to different buyers," says Belitz. "The price a buyer is willing to pay will depend on the strategic fit offered by the seller and what synergies are in play."

"I always tell sellers that if a buyer wants to see the financials first, run in the opposite direction—as fast as possible."

MICHAEL STROGOFF
STROGOFF CONSULTING

Sellers should also explore whether executives and junior-level employees who become part of the acquiring firm will receive financial benefits, such as bonuses for staying, ongoing performance incentives or even equity shares in the acquiring company. "This approach uses carrots as opposed to sticks to retain talent," explains Mandel.

When interests align, the buyer and seller sign a letter of intent, which formalizes discussions and starts a due diligence process. Although the letter of intent is generally not legally binding, it is important because it establishes the terms of the deal. "At this point, I tell clients on the sell side that disclosure is your friend," says Laura Terry Howard, a partner at Fox Rothschild who works with engineers and architects. "They need to be very clear and upfront, so if there are issues with your business, they should be sure to disclose them. This will protect against any claims after the deal closes that they were less than honest or truthful."

### Spread the News

A signed letter of intent is a trigger for sellers to tell staff about a potential deal. Executives should be prepared to sell the merits of the agreement to employees and answer a wide variety of questions. "We usually recommend you don't inform the general staff until after a letter of intent has been executed. Deals like this fall apart for any reason under the sun, and there's no reason to rock the boat about something that may ultimately not happen," says Belitz. "But once you get to the due diligence phase, there are going to be strange people showing up in the office, so you'll need to explain why that's happening."

When it's time to announce the deal, organize a series of in-person meetings. If the selling company has multiple offices, the chief executive or the president and the majority owners should make personal appearances at each office and answer employees' questions. "Transparency is the greatest disinfectant," says David Harding, Boston office director and leader of Bain & Company's global M&A practice. "The more honest and open you can be with employees, the better off you are all going to be."

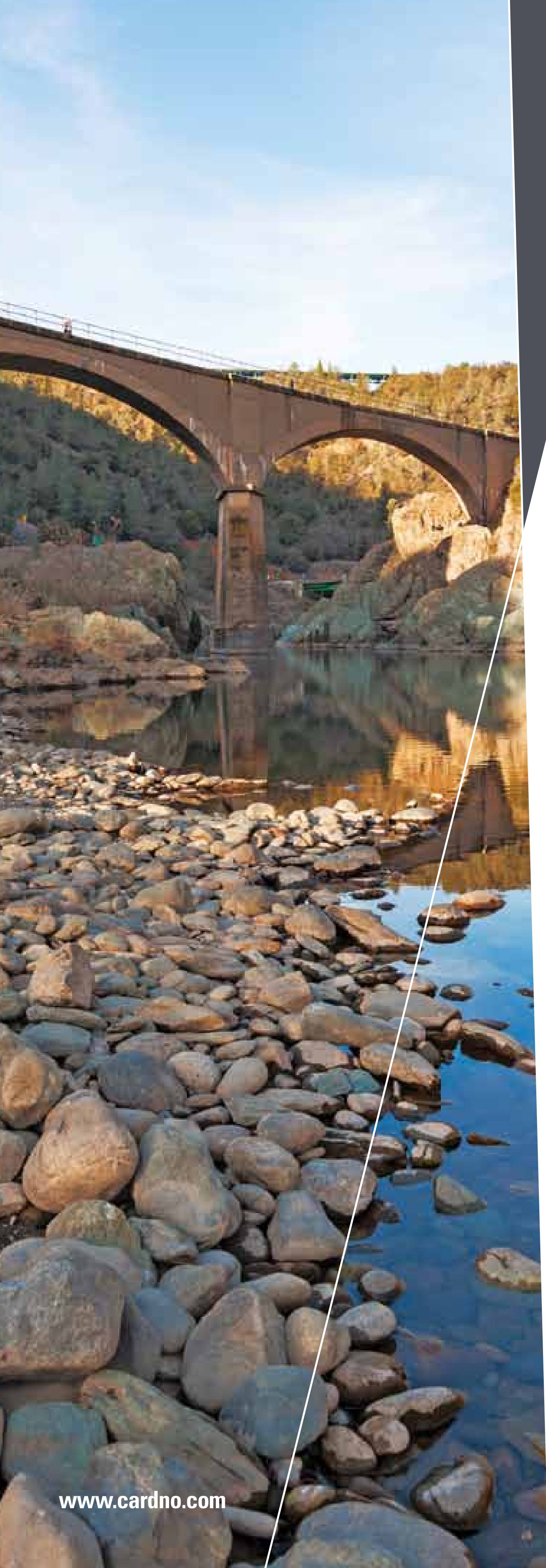
That's not always easy, especially when speaking with people who may lose their jobs after the deal. "But even if the news is bad, the vast majority of people will perform their responsibilities until the end and appreciate the fact that they were told what was going on as opposed to worrying about what might happen," Harding says.

Those whose jobs are secure for the near term will likely have fundamental questions, such as whether their roles will change, who their bosses will be, and what impact the deal will have on retirement plans and health benefits.

Representatives from the buyer's human resources department may be the best people to answer these types of questions, while its senior leaders can provide a vision for the future of the new company.

No matter how openly buyers communicate with the new staff, the situation may be volatile. "It's always a little risky any time this type of a deal happens," Howard says. "People will naturally reconsider their options, and some may decide the grass will be greener elsewhere." ■

*Alan Joch is a business and technology writer based in Francestown, N.H.*

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# Savings In the Sky

By Bob Violino

## Forecast for increase of cloud-based services can mean big savings for engineering firms

For years, IT vendors have touted their products as a means to greater efficiency. Indeed, many of these offerings can help companies increase automation and boost productivity—but often at a steep price.

With the advent of cloud computing and services-based delivery of applications and technology infrastructure, engineering and design firms can realize greater levels of cost-effectiveness and efficiencies through technology—and it couldn't come at a better time.

### Opportunity Knocks

The rise of the cloud and web-based software is changing the way technology is developed and deployed. This is especially true in the engineering sector, where software tools are now vital for both project design and management.

"The difference the cloud has made is no less than remarkable," says Chad Schafer, director of construction products and services at Info Tech, Inc., a software provider for the construction industry.

"For smaller firms, I think it has been a huge equalizer," Schafer says. "Firms now have the ability to use the most advanced and efficient software tools that were previously available only to larger companies with a huge IT infrastructure to support them. This makes smaller firms more competitive."

For larger firms, the cloud reduces a reliance on internal IT and its associated costs. Schafer explains it this way: "Because the cloud is inherently scalable, regardless of the size of your organization, there is a lower total cost of ownership."

### Software Goes Virtual

Software providers are quickly moving desktop applications to web-based offerings because that's what the industry demands. "The licensing model continues to be the most prevalent in the industry," Schafer says. "In many cases, firms can license on a monthly basis for the duration of a project and build that cost into their estimate."

When the project ends, the license expires and a new license is initiated for the next project. "Cloud delivery can also provide patches and updates instantly," Schafer says.

"Rather than issuing updated software releases periodically by CD or download, web updates are seamlessly pushed out overnight or on weekends, so end users are not bothered. They see a summary of changes and then get back to work."

That process is evolving further. Matt Pfohl, principal at Sopris Systems, which provides software for the architecture, engineering, construction and professional services industries, says software is increasingly moving to "a services-based model where you can pay based on usage or consumption, like energy costs.

"For engineering firms, that can create a

RANDY LYHUS

major cost savings in IT spend," Pfohl says. "When you look at seasonality or fluctuations in backlog, engineering firms can pay for what they need when they need it. You also eliminate the large upfront cost usually associated with a software purchase."

With cloud-based services, "most of the costs may be considered operating expense rather than capital expense, which is attractive to many firms," says Mike Anders, president of Agile Frameworks, a provider of mobile field information management software for architecture, engineering and construction firms.

Most if not all software providers have taken to releasing web-based versions of traditional desktop tools with cloud-based options for leasing, Anders says. This encompasses "not just desktop but enterprise-class applications and services. BIM/CAD and other design tool suites, business and project management software, GIS services, field information management, construction site management, asset tracking services, and most other categories of software used in the A/E industry can now be acquired as subscription services."

Many services are now offered via mobile application providers, which bring a different flavor than web-based services, Anders says. "These are most useful to firms that are oriented to site-driven activities such as surveys, site inspections, civil engineering, geotechnical and environmental services, and construction site activities, where mobility within or between project sites is important."

**Cutting Costs**

A key driver of services-based software is profitability. "Cloud-based choices are helping companies of all sizes stay lean and compete, since they are less reliant on IT resources. In the future, I see cloud-based tools becoming more universal and ingrained in projects," Schafer says.

One improvement is more "live look-ins"—the ability to check on a project in real time. "This keeps stakeholders in the loop and keeps projects on schedule," Schafer says. "In addition, projects are more transparent, which is what the industry is demanding."

The technology also enables IT staff within engineering and architectural firms to move from support work—updating and registering software packages—to more strategic IT projects. Plus, it helps them scale.

"Cloud solutions are easier to deploy and provide a quicker time to value on IT investment," explains Pfohl.

"Everything on Amazon is backed up, so we've stopped doing local backups. That has resulted in man-hours gained as well as time and cost savings."

ANDY KNAUF
MEAD & HUNT, INC.

**Core Focus**

Engineering firm Mead & Hunt, Inc., has already moved several internal IT components to the cloud. Andy Knauf, vice president of IT, says the firm has reaped significant savings as a result.

For instance, the firm moved some of its data storage needs from a traditional storage area network (SAN) to a cloud-based service provided through Amazon.

"Over time, just the maintenance on the internal SAN would have cost us more than what it's costing to house the SAN with Amazon," Knauf says. "Everything on Amazon is backed up, so we've stopped doing local backups. That has resulted in man-hours gained as well as time and cost savings."

The firm also moved to cloud-based telephone service, signing on with a Microsoft service called Lync. Knauf says phone costs dropped from $35 a user to an average of $3 per month.

Between the move to the cloud for storage and the upgraded communications system, Knauf estimates the firm will save more than $400,000 this year.

"I didn't think much of the cloud two or three years ago," says Knauf. But during the past year or so, "it has really been picking up steam."

"Smaller firms now have the ability to use the most advanced and efficient software tools that were previously available only to larger companies with a huge IT infrastructure to support them."

CHAD SCHAFER
INFO TECH, INC.

Pfohl agrees. "Engineering firms are recognizing the need to stay focused on their core disciplines and outsource operational administration when possible," he says. "Cloud solutions provide a predictable cost model that can be adjusted as needed. The A/E/C industry continues to push for tighter collaboration and better access to information, which cloud solutions support well."

**Efficient Solutions**

Engineering firm GRAEF leverages the cloud and virtualization to run a more efficient business. The firm identified key areas where it could reduce costs, such as telecommunication, storage and licensing, says David Neumann, director of IT.

GRAEF transitioned from a phone system it had been using for 10 years—at a cost of $240,000 per year—to a Voice over IP system managed in-house. The yearly maintenance for hardware and software is $14,000; in 2013, GRAEF's total spending on telecommunications was about $160,000.

Storage is another area in which the firm has realized significant savings, according to Neumann.

With files stored in the cloud and cached between offices, "files are presented locally no matter what office technically owns that file," he explains. "This has reduced travel costs and overhead project costs and made our teams more efficient."

In 2013, the firm saved $110,000 on storage hardware. This year and beyond, Neumann estimates storage costs will be about $30,000 per year.

"We approach each new initiative or measure with the stance of what is this going to do for us now, what will it do for us going forward and what is going to be the estimated total cost of ownership?" says Neumann. "We have taken ownership and accountability for the [IT] solutions and resources being put into play." ■

*Bob Violino is a business and technology writer based in Massapequa Park, N.Y.*

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# Meeting the Challenge of Retirement Planning

No one can predict what the stock market will do tomorrow, much less on the day you retire. Until that time comes, you face a twofold challenge: Grow your retirement assets when the market is up, and preserve those assets when the market is down.

Without proper preparation, a capricious downturn in the market at the time you retire could damage or end the dreams you've nurtured for your golden years. Case in point: In 2008, when the economy caved in, workers who left their retirement funds entirely in higher-risk stocks and/or stock funds saw their retirement balances drop as much as 40 percent.

## Fighting the Uncertainty Of Retirement Savings

Fortunately, the future of your retirement savings does not have to be left entirely to chance. You can choose from several retirement investment funds that offer guaranteed lifetime retirement income. These funds essentially work like annuities, but with better options.

Typically, with these funds, you will receive lifetime income as a retiree based upon the greater value of either your initial investment or the value of your investment on your anniversary date of entering the fund (known as the ratchet date). At no time will your benefit base (which ultimately gets converted to lifetime income) be worth less than the aforementioned values, thus removing the market downside risk. In addition, unlike a fixed annuity, you can withdraw a portion or all of your funds at any time, although that would, of course, change the benefit base.

This type of fund allows you to minimize or remove the downside risk (with a slight additional management cost) and still benefit from rises in the market. You can also define an annual benefit, offering a possible solution for those contemplating or entering retirement who cannot afford to have the market drop significantly.

Nothing is certain when it comes to investing. Even the credit rating of the U.S. government is subject to downgrade. Guaranteed lifetime retirement income funds are not infallible, either. Nevertheless, they represent one of the strongest classes of funds today for minimizing the risk that a market downturn will destroy the value of your retirement assets.

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The ACEC Retirement Trust (ACEC RT) faces the challenge of planning for the uncertainties of retirement head-on with the introduction of the Great-West SecureFoundation® Balanced G Fund. This guaranteed lifetime income asset class is designed to help shield ACEC plan participants from market risk and preserve income growth potential as investors approach retirement.

It is part of an extensively diversified portfolio of Retirement Trust funds offered to ACEC Member Firms in all categories of national membership. "We added a new plan option for our members because we recognized our plan participants needed a fund of this type," says ACEC RT Chairman of the Board of Trustees Keith Swaffer. "The guarantor is the Great-West Life & Annuity Insurance Company, who we feel is very solid; one of their subsidiaries is our record keeper for the Trust."

*"Ensuring that our members have access to exceptional retirement plan options has always been one of our top priorities."*

BRUCE McFARLAND
ACEC RETIREMENT TRUST

"Ensuring that our members have access to exceptional retirement plan options has always been one of our top priorities," says ACEC RT Executive Director Bruce McFarland. "As leaders in the engineering industry, the trustees are committed to sharing resources to aid our members in helping their employees plan for a successful financial future. Incorporating a beneficial feature of guaranteed lifetime retirement income helps our plan members and participants keep uncertainty at bay."

"The ACEC Retirement Trust is a platform that provides customization and has high-quality investments, transparent costs, and a strong commitment to customer service—all of which are tailored to our members' needs," Swaffer says. "It's a unique and significant benefit of ACEC membership that won't go away."

For more information on the Trust and the guaranteed lifetime income fund, including ways to make this powerful combination work for your firm and employees, visit **www.acecrt.com** or call Bruce McFarland at 248-535-3300.

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Public-private partnerships (P3s) have been effective in leveraging private sector expertise, resources and financing to achieve needed public sector improvements.

To address P3 contract needs, the Engineers Joint Contract Documents Committee (EJCDC)—comprising ACEC, ASCE and NSPE—has just published its first standard P3 contract form, the EJCDC P3-508, Public-Private Partnership Agreement.

The new EJCDC P3-508 agreement is drawn from dozens of P3 agreements already in use—and refined with the advice of P3-experienced owners, attorneys, financiers, developers, contractors and design professionals in the United States and abroad.

The P3-508 presents a variety of contractual conditions typical in P3 agreements, and is flexible to meet the needs of most public and private entities. It is an essential resource for any firm considering the P3 project delivery model.

Visit **www.acec.org/bookstore** and click the "Contracts" link for EJCDC P3-508 and the full library of EJCDC documents.

## New Business Practice Tool for Land Development, Site/Civil and Geo-Technical Firms

In most jurisdictions, land development professionals must certify a wide array of items from final design approval through construction completion. Often these certifications are included in the scope of work with corresponding compensation.

ACEC's Land Development Coalition (LDC) recently released its new tool, LDC 1C-2: *Ethics in Certifications and Sealing/Stamping for Land Development Services*. It presents guidelines on the ethical approach to completing certifications and sealing/stamping documents or drawings, including the important considerations of state guidelines and requirements and the professional's expertise and experience.

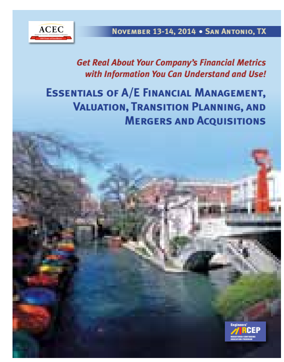
LDC publications concentrate on the following areas: (1) marketing and business development; (2) project management; (3) financial management; (4) risk management; and (5) staffing. Each focus area includes worksheets and sample documents for engineers working in land development to use in the daily running of their firms and/or projects.

All ACEC LDC-developed tools and sample agreement are available for downloading at **www.acec.org/bookstore**.

## Getting a Good Grip on A/E Financial Management

Financials are the lifeblood of every business organization, yet too many A/E professionals do not fully understand how their company's financials work or the vital information they contain. Gaining knowledge and fluency with basic accounting tools is the key to sound decision-making—and growing a successful business.

ACEC's program *Essentials of A/E Financial Management, Valuation and Transition Planning*, to be held Nov. 13–14, 2014, in San Antonio, Texas, explores the impact that a still-volatile economy has on financial management beyond revenue, profits, backlog and staff size. Participants will learn to how to extract and apply key financial measures such as break-even overhead rate, target billing multiplier and labor utilization percentage.




Attendees will examine various performance, liquidity and leverage ratios, and how to benchmark these results with an eye toward shareholder value and the valuation's relationship to internal owner transition planning. The program covers the financial aspects of various forms of transition planning.

**Visit the ACEC Education website www.acec.org/education/seminars for more information.**

ACEC's Business Resources and Education Department provides comprehensive and accessible business management education for engineering company principals and their staffs. Visit ACEC's online educational events calendar at **www.acec.org/calendar/index.cfm** or bookstore at **www.acec.org/bookstore**, or call 202-347-7474, ext. 324, for further information.

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* ATRI, Cost of Congestion to the Trucking Industry, 2014 • † TRIP, Bumpy Roads Ahead, 2012 • ‡ TTI, Urban Mobility Report, 2012

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## On The Move

**Carlo Silvestri** was appointed president of Arlington, Texas-based **Wier & Associates**. Silvestri, who has been with the firm since 1993, formerly served as vice president and principal.

**Brendan Bechtel** was named president and COO of **Bechtel Group, Inc.** Bechtel, son of Chairman Riley Bechtel, is the fifth generation of the Bechtel family to become president of the 116-year-old firm. Bechtel most recently served as president of the company's oil, gas and chemicals business unit. Bechtel Executive Vice President **Jack Futcher** succeeds Bechtel as president of that unit, a position he held previously.

**Kevin Pope** was named president and CEO of **MKK Consulting Engineers, Inc.**, succeeding **Stuart Monical**, who will serve as president advisor for the remainder of the year to facilitate the transition. Monical was with the firm for more than 40 years and served as president for the past nine years.

**Travis Engelke** joined Muscatine, Iowa-based **Stanley Consultants** as CFO and vice president. Prior to joining Stanley Consultants, he served as the financial operations director for CH2M HILL's industrial water business.

**Hamed I. Zaghw** was appointed president of **Parsons International Limited**, where he will oversee its activities in the Middle East Africa region. He is based at Parsons' regional headquarters in Abu Dhabi. **Chip Mallare** was appointed vice president and senior program director of Parsons' bridge and tunnel division focused on western United States projects. He is based in Parsons' San Francisco office.

Omaha, Neb.-based **HDR** promoted **Laurie Roden** to president and COO of HDR Construction Control Corporation, a wholly owned subsidiary that provides construction field inspection services. Roden, with HDR since 1999, most recently served as west region transportation director. She is based in the firm's Phoenix office.

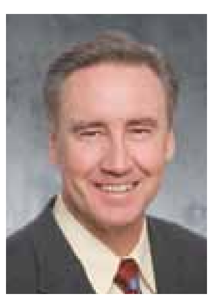
Westfield, Mass.-based **Tighe & Bond** appointed **Robert Belitz** CFO. He previously had similar responsibilities with Malcolm Pirnie, Arcadis U.S. and the Hunter Roberts Construction Group.

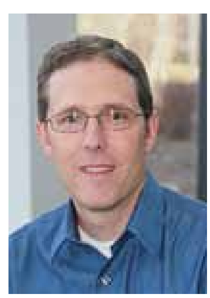
**Michael Baker International** appointed **Brian A. Lutes** executive vice president and CFO, based at the firm's Moon Township, Pa., headquarters. Brian Arsenault, who served as CFO on an interim basis, will continue as vice president in the firm's finance group.

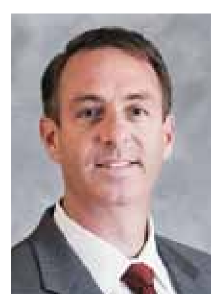
**POWER Engineers, Inc.**, named **Gerry Murray** executive vice president of its generation division following the firm's recent acquisition of Burns and Roe Enterprises. Murray, who will lead POWER's enhanced power plant consulting practice, is based in the firm's Boise, Idaho, office.


Carlo Silvestri


Brendan Bechtel


Jack Futcher


Kevin Pope


Travis Engelke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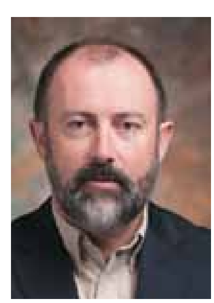
Laurie Roden


Robert Belitz


Brian A. Lutes


Gerry Murray

# Members in the News

## AECOM Announces Executive Appointments Following Acquisition of URS

**AECOM** President and CEO **Mike Burke** announced new executive appointments going into effect following the firm's acquisition of **URS Corporation**. **Fred Werner** will become group president of design and consulting services. He is currently AECOM chief growth officer and president of Europe-Middle East-Africa (EMEA).

Reporting to Werner are the following regional presidents: **Tom Bishop**, who will head up the firm's design and consulting services operations in the Americas, succeeding **Jane Chmielinski**, who will retire in March 2015. Bishop is currently executive chairman of URS Corporation's operations in Europe, the Middle East and India. **Steve Morriss**, currently AECOM chief executive of EMEA, will lead EMEA design and consulting services. **Sean Chiao** will head up Asia-Pacific design and consulting operations.

**Dan McQuade** has been named group president of building construction. **George Nash** will be group president of energy, infrastructure and industrial construction. He currently serves as president of URS's energy and construction division. **John Livingston** will continue as chief executive of AECOM Capital. **Randy Wotring**, current URS president of federal services, will be group president of management services. **Mike Donnelly** will serve as group president of the newly created end markets group. He is currently AECOM chief executive, global support services.




## Welcome New Member Firms

**ACEC/Alabama**
**Wi-Skies, LLC**, Spanish Fort

**ACEC/California**
**H&H Engineering and Construction Inc.**, Stockton
**Innovative Engineering Solutions**, Murrieta
**Khatri International Inc.**, Pasadena
**Willbanks Environmental Consulting**, Clovis

**ACEC/Colorado**
**Tamarack Consulting, LLC**, Edgewater

**ACEC/Idaho**
**Associate Consulting and Design Engineers**, Blackfoot

**ACEC/Illinois**
**CTL Engineers & Construction Technology Consultants, P.C.**, Skokie
**T&I Engineers, LLC**, Hoffman Estates

**ACEC/Kentucky**
**Rivercrest Engineering Incorporated**, Hickory

**ACEC/Louisiana**
**YardStyk, LLC**, Baton Rouge

**ACEC/Minnesota**
**Wunderlich-Malec Engineering, Inc.**, Minnetonka

**ACEC/Missouri**
**CBB, St. Louis**
**Tri-State Engineering, Inc.**, Joplin

**ACEC/New Hampshire**
**Underwood Engineers, Inc.**, Portsmouth

**ACEC/North Carolina**
**Christian Engineering, Inc.**, Charlotte
**Lehmann Mehler Hirst Thornton Associates, P.A.**, Durham
**Structural Innovations Engineering & Consulting, P.C.**, Charlotte

**ACEC/Ohio**
**OHM Advisors**, Gahanna

**ACEC/South Carolina**
**OLH Inc.**, Columbia

**ACEC/Texas**
**B&W Fluid Dynamics, Inc.**, Deer Park
**The Asset Management Consultants**, Houston
**Thompson Company, Inc.**, Houston
**WTC, Inc.**, Houston

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## Calendar of Events

### NOVEMBER

**4** How to Give and Receive Effective Feedback—Improving Your Mental Flexibility or Change Your Thinking About the Way You Think (webinar)

**5** Measuring Time With a Ruler: Statutes of Repose for Public Projects (webinar)

**6** Ownership Transition—Is an ESOP Right for Your Firm? (webinar)

**11** Using PowerPoint Effectively in Presentations (webinar)

**12** Early Speed Wins More Work: How to Gain and Keep the Lead in the Race for Work (webinar)

**13** Earning a Seat at the Table: A Guide for Emerging Leaders (webinar)

**19** The Consulting Engineering Game—Does Size Really Matter? (webinar)

**20** Two Ways to Measure Project Delays: How You Should Use Them on Your Project (webinar)

**25** Best Practices for Highly Effective Boards (webinar)

### DECEMBER

**2** I Don't Need a Website, I Need a Web Strategy (webinar)

**3** If You Haven't Planned It, You Can't Control It (webinar)

**4** Design-Build Contracts, Law & Risk Management (webinar)

**9** Writing and Editing for Readable Proposals (webinar)

**10** The Five Inviolate Laws of Extraordinary Execution (webinar)

**11** Industry Economic Update—What Can We Expect for the First Half of 2015? (webinar)

To sign up for ACEC online seminars, go to **www.acec.org/education**.

Additional information on all ACEC activities is available at www.acec.org.

**Statement of Ownership, Management, and Circulation**

*Engineering Inc.* (USPS 0007395) is published (bi-monthly) six times a year by the American Council of Engineering Companies.

The mailing address of the publication is 1015 15th Street, NW, 8th Floor, Washington, D.C. 20005. The mailing address of the publisher is 1129 20th Street, NW, Suite 700, Washington, D.C. 20036. The publisher is McMURRY/TMG, the editor is Andrea Keeney, and the managing editor is Corey Murray. The owner of the publication is the American Council of Engineering Companies.

There were 27,174 copies of *Engineering Inc.* published for September/October 2014 issue; the average for the preceding 12 months was 28,989. The paid/requested outside county mail subscriptions for the September/October 2014 issue were 26,143; the average for the preceding 12 months was 28,185. The other classes mailed through USPS for the September/October 2014 issue were 250; the average for the preceding 12 months was 225. Total distribution for the September/October 2014 issue was 26,197; the average for the preceding 12 months was 28,845. Copies of *Engineering Inc.* that were not distributed during the September/October 2014 issue (office use, leftovers) was 248 and the average number of copies not distributed during the preceding 12 months (office use, leftovers) was 135. The percent paid/requested circulation for the September/October 2014 issue was 97%. The average percent paid/requested circulation for the preceding 12 months was 98%.

BY NEIL CHURMAN

# Mergers and Acquisitions Golden in California

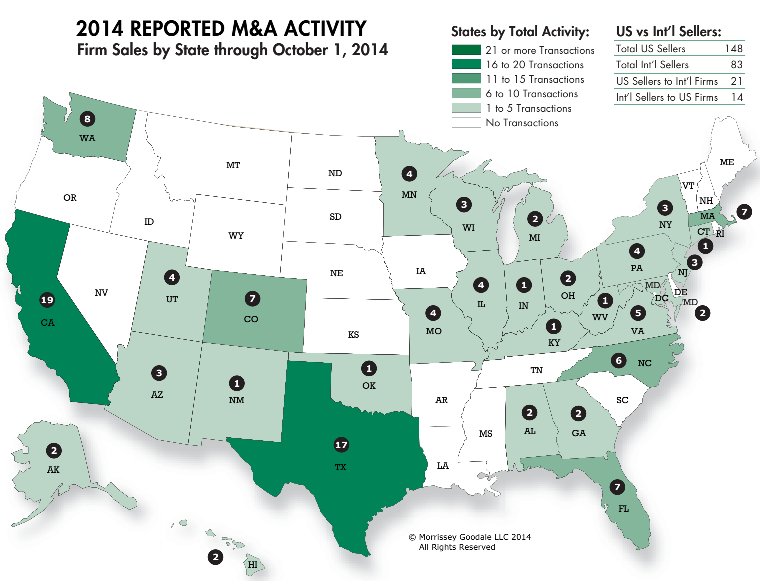
Consolidation has been fast and furious in the engineering industry and no market has seen a bigger shift than California. The Golden State is among the 10 largest economies in the world with a major appetite for engineering services.

Since 2007, more than 160 California-based A/E firms have merged or been acquired, making it the most active state for industry M&A activity—by a long shot. California saw more than 40 more firm sales than Texas, the second most active state, which reported just shy of 120 over that same time period.

Many East Coast and Midwest firms view California as the next frontier to expand business. Michael Baker's acquisition of RBF Consulting, Langan Engineering & Environmental's deal for Treadwell & Rollo, and Terracon Consultants addition of Neil O. Anderson and Associates and RGA Environmental earlier this year are just a few of the deals that have allowed industry firms to successfully expand in California.

California's regions and cities are markets within a market. Many firms have expanded entirely within state borders through M&A activity. Fifty percent of domestic deals done since 2007 have involved a buyer and seller both based in California. Los Angeles-based PSOMAS expanded to Irvine when BonTerra Consulting joined its ranks; Visalia-based Quad Knopf merged with Merced's Fremming, Parson and Pecchenino; and Wetlands and Water Resources, based in San Rafael, joined Environmental Science Associates, headquartered in San Francisco.

San Francisco (16 deals), San Diego (15 deals) and Sacramento (11 deals) were top destinations over the last seven years. Los Angeles (10 deals) and Irvine (eight deals) were also hot markets for M&A activity. We expect this trend toward consolidation to continue as more industry firms set their sights on California as an area for growth.




**Recent ACEC Deal-Makers**

**SEPTEMBER**

ACEC Member **WSP Global** (Montreal, Canada) announced that it has entered into a stock purchase agreement with Balfour Beatty to acquire ACEC Member Firm **Parsons Brinckerhoff** (New York City) for an enterprise value of $1.24 billion. The deal adds 13,500 employees to WSP's network of 17,500 employees worldwide.

ACEC Member **BIG RED DOG** (Austin) agreed to acquire **Johnson Consulting Engineers** (Austin), an MEP engineering firm.

ACEC Member **Olsson Associates** (Lincoln, Neb.) announced its intent to acquire **Ochsner Hare & Hare (OHH)** (Kansas City, Mo.), a planning and landscape architecture design firm.

ACEC Member Firm **Ayres Associates** (Eau Claire, Wis.) acquired architectural firm **Frisbie Architects** (River Falls, Wis.).

**AUGUST**

ACEC Member Firm **Stantec** (Edmonton, Canada) signed a letter of intent to acquire ACEC Member **Penfield & Smith** (Santa Barbara, Calif.), a 90-person civil engineering and land planning firm. ADD, Inc. (Boston), an architecture, interior design, planning and branding firm, signed a letter of intent to merge with Stantec.

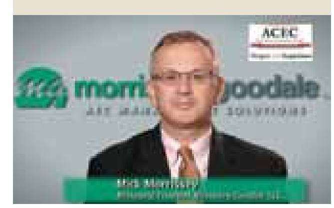
ACEC Member **ARCADIS** (Amsterdam, Netherlands) announced that it intends to acquire Callison (Seattle), a high-level architectural and interior design consultancy.

ACEC Member Firm **Gannett Fleming** (Camp Hill, Pa.) acquired the business of **Innovative Engineering** (York, Pa.), a 24-person electrical design-build contractor doing business as IETC. IETC will operate as IETC, a Gannett Fleming Company.

ACEC Member **David Evans and Associates (DEA)** (Portland, Ore.) acquired engineering, surveying and land planning solutions firm **Hall & Foreman** (Tustin, Calif.). Hall & Foreman subsequently became a wholly owned subsidiary of the parent company of DEA, David Evans Enterprises.

To view the most up-to-date and "live" versions of the M&A heat maps accompanying this article and see who are the buyers and sellers in each state, go to www.morrisseygoodale.com.

**Watch the M&A Takeaway video that accompanies this article, presented by Mick Morrissey at www.morrisseygoodale.com/ACECMergers/NovDec2014**



*Neil Churman is principal consultant of Morrissey Goodale LLC–a strategy, M&A and human capital solutions firm serving the A/E/C industry. Churman, who is based in the firm's Houston, Texas, office, can be reached at nchurman@morrisseygoodale.com.*

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