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ENGINEERING INC.

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AWARD-WINNING BUSINESS MAGAZINE • PUBLISHED BY THE AMERICAN COUNCIL OF ENGINEERING COMPANIES

Wyoming
Republican
Senator

JOHN BARRASSO

Seeks Infrastructure
and Regulatory Reform

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Firm Have
Labor Pains?

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COVER STORY

WORKING ON A CURE

Wyoming Sen. John Barrasso is leading the charge for infrastructure and regulatory reform.



"I am working with the new administration to address our infrastructure priorities and find fiscally responsible ways to start building."

John Barrasso | R-Wyo.

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Broadening Horizons

Kingdom Come State Park Access



A rainbow appears over the construction site of the access to Kingdom Come State Park.

The sights at the top of the new access road are some of the most beautiful in Kentucky.



A sign welcomes visitors to the park.



The newly finished access road leads visitors up to the beautiful sights of Kingdom Come State Park.

For years, access to Kingdom Come State Park (KY 1926) in Harlan County was limited. The steep, narrow roadway to Kentucky's highest state park wasn't wide enough for travelers with trailers on their vehicles and even school buses had been banned. Tourism and educational opportunities were severely hindered for the community. Enter EA Partners.

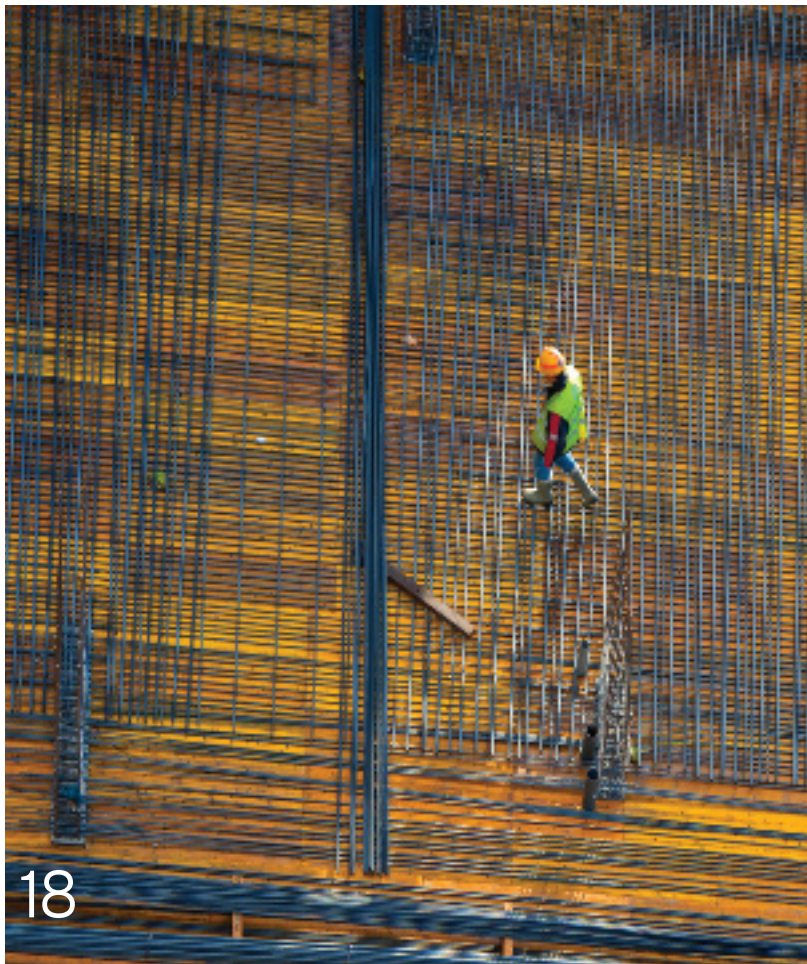
Despite complexities with severely dipping rock, which, unless handled carefully, could cause rock slides, EA's engineers designed a beautiful access road with a flatter grade and 10-foot lanes and 6-foot shoulders. It is now wide enough for passing traffic, vehicles with trailers, and school buses. Educational and tourism opportunities abound. By improving access to the park, these opportunities reappeared to broaden horizons for Harlan County.



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Kingdom Come State Park Award-Winning Team



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European Engineers Face Similar Industry Challenges

We recently met with leading European engineering firm CEOs in Copenhagen, Paris and London for an exchange of views on industry trends and contracting practices. We found that we share many of the same concerns—namely protecting our profit margins against growing commoditization of engineering services; securing appropriate client access in design-build and P3 projects; and dealing with a shortage of qualified talent.

In Copenhagen, we participated in a conference on sustainability, hosted by the European Federation of Engineering Consultancy Associations (EFCA). Sustainability has emerged as an increasingly prominent issue in European projects, just as it has here at home.

In Paris, we discussed the latest contracting trends at a meeting hosted by SYNT-EC Ingenierie (the French equivalent of ACEC) and found much interest in our views on lump sum contracting. In London, we were guests of the British Association for Consultancy and Engineering (ACE) for their annual awards dinner, highlighting firms that had achieved advancements in technology and business practices.

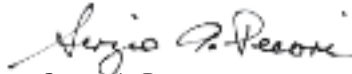
We also noted that European firms look at the American market most favorably and for potential expansion of their rapidly developing global businesses. We, of course, seek to bring them into ACEC as they become established in the U.S.

Throughout our visit, we were impressed with the quality of European infrastructure—from new, efficient airports to the expansive high-speed rail network (we rode smoothly on the Chunnel train between Paris and London, little more than a two-hour commute).

Here at home, now that infrastructure enhancement is a goal of this administration and Congress, our advocacy efforts are designed to propel as large an infrastructure package as possible. The *Engineering Inc.* cover story features Sen. John Barrasso, chairman of the Senate Environment and Public Works Committee who is in charge of this effort. (See page 10).

Looking ahead to our Fall Conference, Oct. 15–18 in Orlando, Florida, we'll hear from best-selling author Martin Ford on the business impact of artificial intelligence and robotics, and what it means for our industry. Robert O'Neill—the former SEAL who killed Osama bin Laden—will discuss leadership skills. Renowned generational expert Neil Howe will address the work habits of the “Millennial Generation” (he actually coined the term). And former CIA and NSA Director Michael Hayden will discuss the latest national security challenges.

Don't forget to register for the Fall Conference, if you haven't already, and enjoy your summer.



Sergio A. Pecori
ACEC Chairman



David A. Raymond
ACEC President & CEO



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"AUTOMATION, AI, ROBOTICS AND WORKFORCE EVOLUTION"

with **Martin Ford**,
Leading expert on
robotics, artificial
intelligence and
the impact on the
workforce and the
economy



"SEAL TEAM 6 LEADERSHIP LESSONS"

with **Robert
O'Neill**, Former
Leader of SEAL
Team Six and the
man who fired the
shots that killed
Osama bin Laden



"THE MILLENNIAL MYTH"

with **Neil Howe**,
World-renowned
expert on
generations and
demography



"CYBERSECURITY, TERRORISM AND CRISIS MANAGEMENT"

With **Michael
Hayden**, Former
Director of the CIA
and NSA

CEO Panels



IMPACT OF TECHNOLOGY ON THE BUSINESS OF ENGINEERING



INTERNATIONAL BUSINESS PERSPECTIVES

ACEC

AMERICAN COUNCIL OF ENGINEERING COMPANIES

Manufacturing Sector Quietly Enjoying Robust Times

The Trump administration has made resurrecting the American manufacturing sector a key component of “making America great again.” The president promised to enact a host of trade and tax policy changes designed to jump-start manufacturing, bring back jobs and accelerate overall U.S. economic growth.

Except, to paraphrase Mark Twain, reports of the sector’s demise have been greatly exaggerated.

The U.S. manufacturing sector is not what it once was—in 1985, the U.S. produced 28 percent of the world’s goods. Nevertheless, the U.S. remains the world’s largest manufacturer, accounting for more than 18 percent of global industrial output.

Additionally, the sector has also been in good health in recent years. Since the Great Recession, industrial output has climbed steadily in each of the past eight years and is now at its highest level ever. Growth was faster in the early years of the recovery and has been moderate recently, but the sector has still averaged close to 4 percent annual growth, significantly outpacing the overall economy.

REASONS FOR OPTIMISM

Several factors suggest the manufacturing sector will continue to grow.

First, and foremost, the increasing production of domestic natural gas and oil has pushed down energy and raw material costs for U.S.-based manufacturers.

Productivity at U.S. factories is among the highest in the world and continues to improve, hitting its highest level ever in the fourth quarter of 2016, according to the U.S. Bureau of Labor Statistics.

Labor rates in the U.S. are also becoming increasingly competitive because wages in many other countries have risen dramatically in recent years while U.S. wages have been relatively flat. Additionally, the increasing pace of technological innovation, especially in robotics, has reduced the importance of wage differentials.

Beginning in 2011, a succession of biannual surveys by AlixPartners found increasing numbers of U.S. firms intending to reshore their new manu-

facturing facilities in the U.S., with the percentage topping out at 49 percent in 2012. The rate has slowed since then—it was 31 percent in the most recent survey—but AlixPartners surmises the drop may be due to many American manufacturers already having reshored their operations.

HEADY TIMES FOR ENGINEERING FIRMS

Firms serving manufacturing clients are confident about their prospects.

“We’re anticipating big benefits for our clients from changes to the business tax structure, and we expect to see a lot of reinvestment to create and retain jobs,” says Greg Brogley, manufacturing division manager at SSOE in Toledo, Ohio.

FMI forecasts that construction put in place in the manufacturing sector will increase 4 percent in 2017 to \$78.2 billion. Growth will increase to 7 percent in 2018, slow to 5 percent in 2019, 2 percent in 2020 and 4 percent in 2021 at which point the construction in the sector will total more than \$92.8 billion annually.

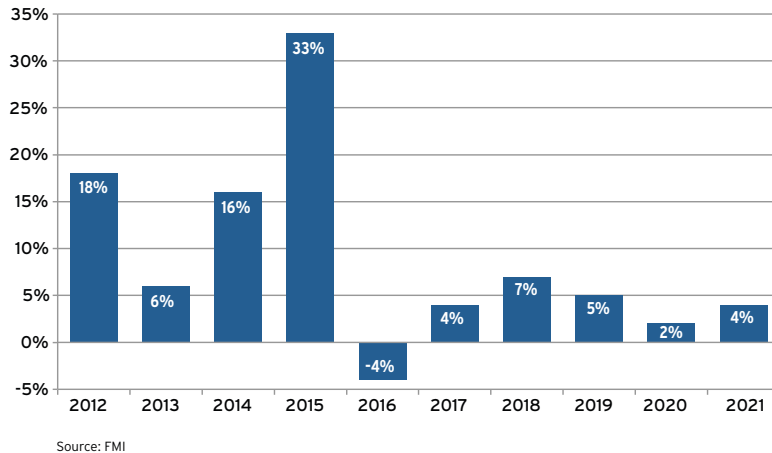
Look at individual segments within manufacturing, Brogley says. “We anticipate almost all areas within manufacturing to grow, and in several we expect to see substantial growth,” he says.

The U.S. remains the world’s largest manufacturer, accounting for more than 18 percent of global industrial output



VIEWSTOCK / GETTY IMAGES

Manufacturing Construction Put in Place



Brogley specifically pointed to advanced manufacturing—semiconductors, carbon fiber and the new generations of batteries—as especially promising.

Rich Rappa, senior vice president, manufacturing & energy, North America at CHA in Rochester, New York, is also high on advanced manufacturing. “Food and beverage continues to be a good market for us, and we also expect to see strong growth in life sciences—pharma and medical devices,” Rappa says.

Automotive is the only segment that is underperforming, but even there opportunities abound.

“There will still be investments in the electrification of vehicles, that’s not going to go away,” says Brogley. “Due to changes in NAFTA, we may see a production shift from Mexico to the U.S.”

However, clients in the manufacturing sector tend to prefer firms that offer a broad range of services—from site selection and advance planning all the way to the punch list. And increasingly, clients are expecting firms to also provide process and systems engineering expertise.

“Part of our strategic plan is to increase our capability in this area,” says Rappa. “We’ll probably concentrate on one or two industrial segments with strong growth forecasts. Where we don’t foresee having the capability in-house for other industrial sectors, we would team with strategic partners.”

Competition is heating up among engineering firms due to the recent strength of the manufacturing sector.

“We sell a value promise through the life cycle of the project,” says Brogley. “On a technical level, most firms can say they’ve done similar projects. We focus on how we can save our clients time, trouble or money.”

“Our strategy is to develop relationships with clients who value engineering, who don’t just look at bottom line costs, who value the expertise that we bring to the table,” adds Rappa. ■

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

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\$1 Trillion Infrastructure Program Outlined in President's 2018 Budget

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President Trump's 2018 budget blueprint envisions a 10-year, \$1 trillion infrastructure program, including \$200 billion in new federal funding, private investment and regulatory reforms to expedite projects.

"The administration's goal is to seek long-term reforms on how infrastructure projects are regulated, funded, delivered and maintained," his budget document states. A range of market sectors are likely targets, including surface transportation, airports, waterways, ports, drinking and wastewater, broadband and key federal facilities. A subsequent White House blog post added new details for how the \$200 billion in funding would be allocated including \$100 billion for local prioritization, \$25 billion for rural infrastructure, and \$15 billion for "transformative projects."

The plan would expand existing financing programs supported by ACEC: the Transportation Infrastructure Finance and Innovation Act program to finance transportation projects, as well as a similar program, the Water Infrastructure Finance and Innovation Act, to support water projects. It also includes tolling options for projects on the interstate system and wider use of private activity bonds for infrastructure projects. The administration also wants to create a nongovernmental entity to manage the nation's air traffic control system.

For transportation in fiscal year 2018, the president's budget seeks full funding for the Fixing America's Surface Transportation Act programs funded through the Highway Trust Fund, including \$44.3 billion for highways and \$9.7 billion for transit formula grants. It also includes \$3.35 billion for the Airport Improvement Program, which is consistent with current funding.

U.S. DOT discretionary programs, however, would be reduced by 13 percent, including cuts to transit capital investment grants and the elimination of the Transportation Investment Generating Economic Recovery multimodal grant program. The budget would also eliminate the \$3 billion Community Development Block Grant program.

Department of Defense programs are slated for \$52.3 billion in additional funding, which would include facilities construction, while the Corps of Engineers budget would be cut by \$1 billion. The president's budget also proposes significant cuts to foreign assistance programs, as well as embassy construction.

The State Revolving Fund programs for water and wastewater would see a modest increase in spending in 2018 while Department of Energy programs would face significant cuts.

Congress rejected many of the same proposed cuts in the spending bill for fiscal year 2017. Lawmakers are expected to debate a budget for 2018 later this summer.

ACEC Supports PABs for Public Buildings

Sens. Dean Heller, R-Nev., and Bill Nelson, D-Fla., and Reps. Mike Kelly, R-Pa., and Earl Blumenauer, D-Ore., have reintroduced legislation that would create a new financing mechanism to support the design and construction of schools, court-houses, libraries and other public buildings.

S. 326 and H.R. 960 would add public buildings to the list of facilities that qualify for private activity bonds (PABs). Under the legislation, up to \$5 billion in PABs would be available to state and local governments to construct a variety of governmentally owned buildings, providing needed infrastructure funding and

encouraging public-private partnerships. The buildings would continue to be owned by the governmental entity, and the bonds could not be used for sports or entertainment facilities.

ACEC and its membership organizations are working to build support for S. 326/H.R. 960 through lobbying efforts on Capitol Hill and



DAVID CALVERT / STRINGER / GETTY IMAGES

Sen. Dean Heller
R-Nev.



NABAZ / CONTRIBUTOR / GETTY IMAGES

Sen. Bill Nelson
D-Fla.

grass-roots member engagement. The Council hopes the proposal will be included in tax reform or infrastructure legislation that is expected to move through Congress this fall.

FHWA Finalizes Performance Management Regulations, Withdraws GHG Emissions Measurement

The Federal Highway Administration has finalized two regulations implementing the performance management requirements for state DOTs and metropolitan planning Organizations under the Moving Ahead for Progress in the 21st Century Act and the Fixing America's Surface Transportation Act.

The Pavement and Bridge Condition Performance Measures final rule establishes measures for state DOTs to assess the condition of pavements on interstates and the National Highway System (NHS), and for bridges carrying the NHS, including on- and off-ramps connected to the NHS.

The agency also finalized the national performance

management measures for assessing freight movement, travel time reliability, congestion mitigation and air quality improvement programs. This was the last and most complicated of the performance rules mandated by Congress. The agency indefinitely postponed a controversial provision requiring states to measure and set reduction targets for CO2 emissions, which ACEC and other stakeholders had opposed as outside the agency's statutory authority and an unnecessarily burden on transportation agencies.

State DOTs are required to set performance targets by May 2018 and submit biennial progress reports beginning in May 2020.

ISSUES ON THE MOVE	WHAT'S NEXT
FY. 2018 Budget	Congressional action this summer
New financing for public buildings	Possible action as part of tax reform in the fall
Water infrastructure, QBS	Congressional action expected this summer

ACEC Steps up Fight Against PVC Pipe Mandates

ACEC is working at the state and national levels to oppose proposed legislation requiring the use of PVC and other types of plastic pipe on infrastructure projects in a manner that interferes with the judgment of licensed engineers.

To date, ACEC and its state organizations have had an unbroken record of success in stopping these proposed mandates, arguing that technical decisions regarding pipes and other materials should be made by engineers in consultation with their clients.

New challenges, however, continue to emerge. Over the past year, the plastic pipe industry has been most active in Indiana, Michigan, Ohio and South Carolina.

ACEC is working with our state organizations to assemble materials to assist in this effort and is coordinating with national partners to broaden the coalition in opposition to such mandates.



EVANJALIA/SHUTTERSTOCK

Bipartisan Senate Water Bill Funds CSO Projects, Expands QBS

Sens. Ben Cardin, D-Md., and John Boozman, R-Ariz., have introduced legislation that authorizes funding to control wet weather discharges and expands Qualifications-Based Selection (QBS) for federally funded water projects.

The bill authorizes \$1.8 billion over five years to assist communities with projects to control combined sewer overflows, sanitary sewer overflows and stormwater discharges. The measure would also expand the requirement to use QBS for engineering services under the State Revolving Fund program to include drinking water projects.

Both provisions were adopted as part of a larger water bill in

the Senate last year. ACEC is working with the bill's sponsors to promote passage, either as a stand-alone bill or as part of a larger infrastructure proposal this year.



HISHAM IBRAHIM / GETTY IMAGES

ACEC Backs Legislation to Create Level Playing Field for Federal Trade Association PACs

ACEC is backing legislation to repeal the "prior approval" rule, which requires ACEC/PAC and other federal trade association political action committees (PACs) with corporate members to get permission from individual members before soliciting and/or accepting contributions.

The bill, introduced by Mark Amodei, R-Nev., would allow ACEC and other associations to communicate with their members under the same set of federal rules that apply to corporate PACs and labor unions.

The current prior approval law is discriminatory because no other political entity, including corporate, labor union and individual membership association PACs are subject to this restriction. The requirement also limits free speech protected by the First Amendment because it hinders political participation among association members.

For More News

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

THE DOCTOR IS IN: Sen. John Barrasso

Despite a never-ending legislative to-do list, regulatory reform and the nation's crumbling infrastructure are emerging as key policy priorities for Congress and the new presidential administration.

In an exclusive interview with *Engineering Inc.*, Sen. John Barrasso, R-Wyo., discussed his vision for infrastructure investment, regulatory reforms and energy legislation.

"I am working with the new administration to address our infrastructure priorities and find fiscally responsible ways to start building," says Barrasso, chairman of the Environment and Public Works Committee.

GARY LANDSMAN



After 24 years as an orthopedic surgeon—known by many as Wyoming’s Doctor—he was elected to the Senate in 2008.

Re-elected in 2012 with over 75 percent of the vote, he also serves on the Committee on Energy and Natural Resources, the Committee on Indian Affairs and the Committee on Foreign Relations.

ACEC: Mr. Chairman, the new administration and new Congress bring new opportunities. What are your key agenda items for 2017?

Sen. John Barrasso: Our committee is already off to a fast start. In February, the Senate confirmed Oklahoma Attorney General Scott Pruitt to lead the Environmental Protection Agency [EPA], and we know that several more nominees will be going through our committee in the coming months.

We have held important oversight hearings on issues like our nation’s infrastructure needs. Specifically, we must upgrade our roads, bridges, dams and water systems. Doing so will bring our infrastructure into the 21st century. This is a shared goal with President Trump’s administration, but we need to make sure the needs of rural communities are included.

We have also examined laws that need to be updated, in order to ensure they are working to protect the environment and the interests of the American people. We need to prioritize conservation by modernizing the Endangered Species Act. We need to ensure that endangered species are being recovered to the point they can be delisted.

We must also encourage the use of more clean energy by promoting innovation in the nuclear energy field. Just recently, I introduced the Nuclear Energy Innovation and Modernization Act with a bipartisan group of senators. This legislation will simplify regulation and promote innovation in the nuclear sector.

The administration and Congress have already begun work to roll back harmful regulations from the Obama era that burden American families, small businesses and stifle economic growth with little environmental benefit. The president issued an executive order to revise the government’s rules regarding Waters of the United States. We will also continue to work to limit rules the Obama administration set forth in the Clean Power Plan.

Overall, I believe we have a unique opportunity. It is important we take the necessary measures to preserve and protect our environment while also promoting innovation, modernization and economic growth. Those goals are not mutually exclusive.

ACEC: President Trump has identified infrastructure investment as a priority for his administration, and the committee you now chair—the Environment and Public Works Committee—will play a key role in moving that legislation forward. Is this something that Congress can get done this year, and what would you like to see in this package?

Barrasso: I am optimistic the administration and Congress can work together to improve the country’s aging roads, bridges, dams and water systems. Much of our nation’s infrastructure

“I am optimistic the administration and Congress can work together to improve the country’s aging roads, bridges, dams and water systems.”

SEN. BARRASSO

is old, outdated and in need of repair. We need to invest in modernizing our infrastructure for the safety of Americans and to promote interstate commerce and nationwide economic growth.

On the Environment and Public Works Committee, we’ve been holding infrastructure hearings. They focused on updating infrastructure in rural areas and on failing flood control systems.

Across all building projects, the committee will work to remove punishing regulations from Washington that limit economic growth. Bureaucrats shouldn’t just use a top-down, one-size-fits-all approach. We need to be smarter about these rules and more aware of the effect they have.

When updating our infrastructure, we cannot overlook rural projects, as what affects rural areas in turn affects the rest of

America. Roads stretching across rural lands are widely used to transport goods to big cities, and water systems in rural areas can affect agriculture production on which urban areas also rely.

Additionally, when rural flood control systems fail, rural communities suffer greatly and often lack necessary funds and resources to clean up and repair the damage. In any infrastructure legislation, we cannot forget about rural needs. Just because most of the population doesn’t drive on these roads every day or directly work on the farms and ranches doesn’t mean they don’t rely on them too.

ACEC: You have raised a number of concerns over various regulatory actions coming from the EPA in the previous administration. What role will the committee take this year in advancing a regulatory reform agenda?

Barrasso: With administrator Pruitt’s confirmation to head the EPA, I have great confidence that many harmful Obama-era rules will be overturned. In February, the president signed an executive order on the Waters of the United States rule that instructed the EPA to either revise or completely rescind the rule.

While regulatory reform has already begun, we need to look at legislation to further undo harmful rules. I have introduced a resolution as part of the Congressional Review Act to remove the Bureau of Land Management’s harmful and duplicative rule on methane emissions from oil and gas operations on federal and Indian land. The EPA and many states already regulate methane emissions.

The committee will also work to streamline regulation to allow for roads, bridges and other public works projects to be built more quickly and efficiently.



Sen. John Barrasso (right) discusses infrastructure investment with ACEC President Dave Raymond (left) and former ACEC Chairman Peter Strub (center) at his Capitol Hill office.

GARY LANDSMAN

ACEC: You'll also play an important role in advancing energy legislation, which came close to passing but ultimately stalled in 2016. What are your priorities for energy policy, and what's the outlook for passage of a comprehensive energy bill in 2017?

Barrasso: I introduced a bipartisan nuclear energy bill that will encourage nuclear energy development by modernizing regulations for nuclear reactors. We need an energy policy that includes a diverse energy mix to not only promote clean energy but also to secure our energy independence, support innovation and create jobs. I have partnered with several senators on both sides of the aisle on this legislation. I expect it will pass our committee and advance to the full Senate.

I also think it's important to have national energy export policies that help reduce our nation's trade deficit and also strengthen the energy security of our allies who want to buy our gas and coal. For energy production, we need to make sure permits are issued in a timely manner for on and offshore production and allow for the construction of new pipelines.

ACEC: Congress enacted a water resources bill at

"We need to modernize our water infrastructure to keep Americans safe and commerce flowing."

the very end of the term in 2016, which ACEC strongly supported. Will the committee advance additional water resources legislation in this Congress, and what are your goals in the area of water infrastructure?

Barrasso: The committee held a hearing on water infrastructure and flood control systems. We need to modernize our water infrastructure to keep Americans safe and commerce flowing. This includes clean water and safe drinking water infrastructure, as

well as locks, dams and levees. I expect these to be a major part of any infrastructure package that passes this Congress.

For specific legislation, Congress is back on track to enact a Water Resources Development Act [WRDA] every two years. I plan to begin work on WRDA 2018 at the beginning of next year. I expect the bill will address all the Army Corps of Engineers' mission areas, including flood control and navigation. ■



THE YEAR OF ENGAGEMENT

BY STACY COLLETT

**HOW FIRMS
CAN ADAPT
TO TODAY'S
TECHNOLOGY,
ECONOMIC
AND SOCIAL
CHALLENGES**



JOHN LUND / GETTY IMAGES

ACEC Chairman

Sergio "Satch" Pecori,

chairman and CEO of Hanson Professional Services, Springfield, Illinois and the other ACEC Executive Committee members agree that "the outlook for our industry is bright." The new administration is suggesting a trillion-dollar investment in infrastructure, streamlining regulations and tax benefits.

"But the industry still faces challenges in the way it conducts business, including our contracting modalities, and the use of technology," says Pecori.

Chair-elect **Manish Kothari**, president and CEO of Sheladia Associates, Rockville, Maryland, adds "There needs to be a fundamental change about the way we think about our industry and the way we utilize technology to interact with our customers."

TECHNOLOGY TAKEOVER

Technology and big data are driving forces that require transformation in engineering businesses, as well as clients' businesses, according to Vice Chair **Gayle Roberts**, CEO of Stanley Consultants, Muscatine, Iowa. Every market sector can already see the technology wave that will impact its business. Technology will become a bigger part of a firms' delivery platform, as Building Information Modeling and 3D modeling are now required on virtually all projects.

Cybersecurity and risk management are among the top challenges. "Every firm needs to start looking at cyber insurance and cyber risk. It's almost affordable now—and it should be at the table," says Vice Chair **John Nelson**, CFO of Wright-Pierce, Topsham, Maine. "All it takes is one data breach, and your company could have serious problems—particularly smaller companies."



Sergio "Satch" Pecori



Manish Kothari



Gayle Roberts



John Nelson



Joel Goodmonson

Sophisticated technologies also generate terabytes, even petabytes, of data the firms are challenged to store and share with clients. Vice Chair **Joel Goodmonson**, executive vice president of Architectural Engineers, Boston, began using laser scanners more than two years ago. Over time, he watched file sizes outgrow email attachment limits and then file-sharing apps.

"Today, the files are so large that we download the files on 500-gigabyte external hard drives to be messengered to clients," he says.

Roberts noted that "our ability to access, analyze and use big data will allow us to solve complex problems. This will be a much different workforce, and we may move away from saying we provide 'engineering solutions.' We are in the technology solutions business."

No doubt, technology is expensive, and many clients continue to pay on an hour basis versus a value or performance basis, which challenges how firms institute greater efficiency and employ new technologies.

"We have to get away from that because it doesn't drive innovation. We have to have something that allows us to charge lump sum," says Pecori.

"What we need to do is educate our clients into working on lump sum." Lump sum, where firms charge by milestones, would allow them to come up with the most efficient and innovative ways to spend project dollars, according to Pecori.



Michael McMeekin

Technology's overall impact on the engineering industry has many unknowns, says Vice Chair **Michael McMeekin**, president of Lamp, Rynearson & Associates, Omaha, Nebraska. "Continual software advancements automate

lots of design process that were previously done by hand or with less sophisticated software. This will impact jobs in the industry," McMeekin says. "Then there are technology conglomerates such as Amazon, Microsoft and Google that are at the forefront of advances in technology, including infrastructure-related ventures such as autonomous vehicles and smart-cities," he says. "In the long-term, the overriding question is where will our industry come out as technology advances? Will engineering have a leadership role in the development of new technology, or will technological advances continue to come from outside of our industry?"

STATE BY STATE

Many states have their own unique technology challenges. **Dave Bender**, executive director of ACEC/Illinois and NAECE President, says innovation and technology are stifled or held back in many states due to strict procurement laws, which prevent consultants from having a meaningful dialogue with their government clients. This short-changes clients and the taxpayers from receiving the best infrastructure and technology as a final project.

In 2009, Illinois enacted new procurement laws that limit communication with state employees by those who are in the process of filing for, or obtaining, a state contract.

"Many times our government clients are the last people that are aware of what's out there as far as technology or practices," Bender says. "If you were submitting for a project, you could not discuss anything with them because it would be seen as trying to gain influence or special favor." ACEC/Illinois is trying to reach state agencies through noncontract-related industry meetings, liaison committee meetings and educational opportunities that help them understand today's technology options.



Dave Bender

ECONOMIC CHALLENGES

Undercapitalization or lack of funds for infrastructure is a huge problem around the nation and for our industry, says Vice Chairman **Mary Erchul**, project manager at Ghirardelli Associates in Irvine, California.

"When people don't have money they get nervous, and if they don't feel there's a funding path for infrastructure, they stop planning for it—which is terrible," Erchul says. "That's the worst thing you can do. It's true of firms, too. If you want to grow your firm and you stop planning for that because you don't have the cash flow, that's when you get hit—you're contracting when you should be expanding. Firms and the public need to be more open to investing in the future."



Mary Erchul



Thomas Mosure

Firms are also juggling a business boom with the economics of hiring, says Vice Chair **Thomas Mosure**, president and board chairman at MS Consultants, Columbus, Ohio. "As you grow, so does your need for capital and resources. Every new employee costs \$8,000 to \$10,000 just to fit them with hardware, software and the things they need to do business. So developing talent becomes an economic item on your balance sheet, along with finding a workspace for them," he

says. Mosure's firm added 60 employees last year.

Furthermore, the perennial shortage of engineering talent still plagues firms. At the same time, they are getting pressured by higher salaries while also managing clients who want the work done cheaper and faster, Nelson says. "We all need to offer our clients higher value, whether that's better, cheaper, long-term cost solutions that others aren't offering, or technologies that customers are willing to pay for," he says.

ALTERNATE DELIVERY MODELS

Alternative delivery models, such as design-build and public-private partnerships, also bring a host of risk factors that firms must recognize and control, says Vice Chair **Charles Gozdziwski**, executive chairman at Hardesty & Hanover, New York.

"They are becoming a bigger percentage share of our revenue, and each one has its own risk that we have to adjust to," he says. "It could be a one-time relationship, which is bottom-line oriented and not relationship building. In all these delivery systems, there are gray areas that are controversial and that impact engineering's bottom line such as what part of the project is actual design and what part is actual construction support services."

Gozdziwski's firm employs a full-time risk manager who gets involved in contract language, terms and conditions. "We weigh that into the decision of a go or no-go. The cost of hiring a risk manager is worth it because it will cost you more if you don't have one," he says.

"We need to make sure we have our people trained so we don't have an outcome that we're not accustomed to," says Pecori. "You already have a number that you're working to, as opposed to trying to get to an outcome that the owner might want that might cost more than the price point you were given. There needs to be some pushback in some areas where perhaps there wasn't pushback in the past."

SOCIAL ISSUES

In addition to managing risk and barriers to technology, today's firms need to take the lead in tackling a diverse list of social issues—including workplace, community and political matters—and to help bring about change.

McMeekin is concerned by the increasing lack of respect for true science in society and in public policy. "Policy issues that should be debated on the basis of scientific facts and research become political issues. Spin doctors and public relations experts are given equal voices as professional engineers and scientists," he says. "You see this in policy debates about climate change, air quality, water quality and ecosystems. Policies that would address these issues, improve the environment and our communities, and benefit our businesses become clouded and fail to gain the support they deserve."



Charles Gozdziwski

To address these and other issues facing the industry, Bender urges engineers and their firms to be leaders in the public policy arena. "We need engineers to become city council members, county supervisors or board members, mayors, members of the state General Assembly and even members of Congress," Bender says. "We simply cannot sit back and wait for things to come to us. We need to lead these discussions."

RETHINKING THE WORKPLACE

These changing social dynamics of the workplace are requiring firms to relax some office policies—and not just for millennials, Mosure says. "I think all people generally want more flexibility in their work environment and possibly working from home," says Mosure. "A company has to develop policies that allow social changes as they're occurring in people's lives. Balance what they need to be happy with what you need as a company to be able to get the work done and make a great culture."

Erchul encourages firms to embrace generational differences. "Millennials tend to be more work-life balanced people. They like to give back to their communities," says Erchul. "I find they have a lot to bring to the table. They get the technology and understand the power of social media. Instead of looking at them and saying 'I don't get it,' we need to bring their strengths and our strengths together and create a superpower."

Goodmonson's firm is looking for ways to help new hires balance the financial challenges they face today with the equity opportunities they will have tomorrow. "We're looking at hiring new grads that will have college debt in excess of \$100,000. There's a certain sensitivity that we've got to have for folks that are starting out with a mountain of debt and how we are moving them along," Goodmonson says. "In 10 to 12 years, when you want them to buy your firm's stock, they're just getting out from under the debt of their student loans and have no money to invest in the firm."

The firm is also trying to head off the problem by bringing in about 15 percent of the total headcount in paid interns each summer. "It helps potential future employees pay their loan debts as they go and helps them fall in love with the career without the stress," he says.

"Close relationships with our clients, a deep level of trust, and our ability to understand our client markets and provide outstanding service will continue to be a bedrock of our industry," Roberts says. "Despite challenges our firms face, we will thrive if we defend and protect our client relationships."

ACEC President and CEO **Dave Raymond** notes that "the expertise and perspectives of the new ExCom position the Council to effectively represent and serve our members' interests." ■



Dave Raymond

Stacy Collett is a business and technology writer based in Chicago.



BY CURTIS SPRUNG

With a limited talent pool and demand for skilled engineers growing, is the industry poised to meet the growth expected over the next few years, or is it on the cusp of a cliff?

“Firms are having record years. 2016 was a record year in profits because firms cannot find enough qualified talent. They’re working their people harder and longer—which drops more profit to the bottom line,” says Mick Morrissey, managing principal at Morrissey Goodale, LLC.

That increased output among workers leads to greater profitability for the firms involved. But, there’s a real concern on just how far firms can push employees before they burn out. “Is that sustainable?” asks Morrissey. “Probably not.”

Experts keep this in mind when parsing engineering workforce numbers. A recent report from the Department of Labor suggests that architecture and engineering employment has finally rebounded since the 2008 recession, with employment topping out at 1,453,800 employees in December 2016. That’s 800 more employees than the previous peak in February 2008.

“The talent pool, by and large, is higher, but it’s not dramatically higher,” Morrissey says.

Millennials just joining the workforce help buoy those Department of Labor employment numbers, but with a new generation comes new workplace expectations.

“Where we’re finding more of a struggle is the seven- to 15-year range of experience,”

**ENGINEERING EMPLOYMENT HAS MATCHED
PRE-RECESSION LEVELS, BUT DOES THAT
MEAN INDUSTRY EMPLOYMENT WOES ARE
OVER? NOT JUST YET**

BEERS

ARTHUR MEYERSON / GETTY IMAGES

says Mary Horan, vice president of organizational development and human resources with Merrick & Co. “They’ve gone through the education and they change careers. I think that’s somewhat of a millennial trait.”

The engineering industry lost some momentum with the millennial generation partly due to the fact so many came of age during the 2008 recession and saw job prospects plummet, according to Greg Powell, managing director for FMI Capital Advisors. To attract and retain those that are recent graduates or graduating, the challenge is offering the right mixture of career opportunity, project exposure and compensation. It’s not just about pay and vacation time anymore. “Younger generations demand more opportunity, more transparency and a bigger voice. I think the firms that can offer that can compete well for talent,” says Powell.

“If somebody’s going to be happy with the profession, they’re more than likely to be retained rather than going for the almighty buck,” says Don Millard, acting director for Engineering Education and Centers with the National Science Foundation.

If money isn’t the answer, then what is? It’s a tough question to answer, and it’s invariably going to differ from region to region. Flexibility to work from home, being able to direct your own job progression and even increased reliance on bonuses are all tempting benefits beyond a higher salary. The perks are more affordable for smaller to midsize firms.

“I’ve seen more emphasis on work-life balance,” says Powell. “People use culture and work environments to lure talent. Our compensation team is tracking engineering

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"If you look at what happened through the recession, there were less W2's and more people started being independent contractors."

MICK MORRISSEY | MORRISSEY GOODALE, LLC

bonuses, seeing utilization rise over the past five years."

Firms such as Merrick are reinvesting in their employees, offering formal training programs and communicating to employees just how they can move up the company ladder, or as Horan describes Merrick's structure, the "career lattice."

"We have three different levels of training programs including a leadership development program," says Horan. "These are formal programs that allow us to invest in our employees so they can realize their future here. In addition, our employees are given opportunities to expand their skillset by working on projects in other business units. Many of these ideas came from our employees in our climate surveys."

Including employees in the decision-making process and giving them a more transparent view of the firm is a popular strategy for firms hoping to retain younger talent. These tactics don't just make them feel like owners in the firm through input, but actually provide them with equity.

"The key is recruitment and retention," says Powell. "There are firms that are becoming very good at keeping their employees—offering equity ownership, equity in kind. It's sort of deviating away from generations past with the king at the top of the firm, and few had equity upside or even visibility into how profitable the firm was."

SLIMMING DOWN

Attracting and retaining talent is one thing, but restructuring to continue thriving in the current environment is another. Many firms have already adapted after losing employees during the recession, and that shows in years of record profitability.

"If you look at what happened through the recession, there were less W2's and more people started being independent contractors," says Morrissey. "That's what you'll see more of in our industry. Firms are going to find they have to skinny down to a core talent group and augment that talent with staff on demand. We don't see this as lining up firms to fail or to close. It puts tremendous pressure on talent management and on human resources."

"There has been a shift in the way that large industries are employing engineers on a project to project basis," says Millard.

For Merrick, that shift means fewer senior leaders but more avenues of employment.

"We do hire contract employees, and then they move on when the work ends," says Horan. "We also have competitors that, at times, we partner with and we utilize each other's employees if there is an influx of project work."

The idea of loaning talent out to someone you compete with might seem like a scary prospect, but Horan says everything is covered in the contracts up front. The risk is diminished, and

IMMIGRATION ISSUES?

With the stress on the market, newly minted engineers sometimes expect large paychecks even while their skills are lacking. To counter this, some firms looked overseas for quality employees.

"We talk to larger engineering design-build firms," says Greg Powell, managing director for FMI Capital Advisors. "Many continue to tap foreign markets. Many of the larger companies are set up to sponsor foreign workers in

this way. This approach is driven not just by the general lack of engineers here in the U.S., but by the perceived shortage of highly skilled engineers."

One potential issue is the Trump administration's impact on these workers. With uncertainty surrounding travel restrictions and access to worker visas, and a focus on America first, could there be an impact on hiring foreign engineers? Powell raised the question, but had no definitive answers.

Many foreign engineers working in the U.S. do so through the H-1B and employment-based (EB) immigrant visa programs. These programs are essential to ensuring the engineering industry can recruit highly skilled foreign engineering professionals to help address the critical shortage of engineers in the U.S. today.

ACEC favors an increase in the number of H-1B and EB immigrant visas as a means of addressing the shortage of engineering professionals



in the U.S. ACEC supports raising the cap on H-1B visas from 65,000 to 110,000 a year, with the possibility of the cap increasing to 180,000 based on employment market conditions.



ZUBIN SHROFF / GETTY IMAGES

the employee being shared is likely working on nonproprietary aspects of projects.

ONGOING EDUCATION

Engineering remains one of the most in-demand professions in the world, and that isn't likely to change in the future, so finding ways to expand the talent pool is key.

Education and engagement—long before students get to college—are essential to that goal.

For years there have been numerous efforts to encourage children to engage in STEM fields and embrace the idea of engineering as a potential career. Educators are supplementing those efforts in the classrooms with extracurriculars that have seen a surge in popularity, such as the maker movement. Makers are designers, engineers and anyone with a desire to experiment that have grown in prominence with the low cost of 3D printers and microcomputers.

"In K-12, I would say that the kinds of things we're funding currently fall into a variety of different buckets," says Millard. "There's the maker phenomenon. We've funded quite a few studies that are looking at how maker activities can drive interest to engineering and put the positive outcomes into practice. That can stimulate someone to say 'maybe I should try and look at engineering.'"



"Where we're finding more of a struggle is the seven- to 15-year range of experience."

MARY HORAN | MERRICK & CO.

Inspiring students to see the excitement in the possibility of an engineering career can have long-term benefits for the workforce.

"While we don't have a formal program, we have engineers who go into different schools to present, teach or support local programs like the robotics club," says Horan. "High school and college kids can also participate in a job shadow at any of our Merrick locations."

Working engineers donating their time to engage with students actually does pay dividends.

"What we've found is a key piece is providing the proper kind of mentorship as they go into undergrad and careers," says Millard. "Fashion activities that allow them to get the right type of mentorship, graduate and then those mentors help them with career options."

DOOM AND GLOOM?

Planning for the long term is important, but it's also important not to lose sight of how the industry will fare in the short term.

"We're roughly back to where we were [before the recession]," says Powell. "The difference is, before, engineering and construction was a much bigger percentage of GDP if you use construction put-in-place as a proxy for the broader engineering and construction industry. So GDP's recovered, but construction, architecture and engineering are not keeping pace. The industry represented 8.5 percent of GDP before the recession; it's a little over 6 percent now. The rest of the economy has grown at a faster rate."

Powell estimates the A/E industry is lagging behind the larger economy by one to two years. While labor issues will persist, as the larger economy's recovery tapers off, A/E has more time.

"We're in the ninth year of this economic recovery, which is much longer than we've seen in past economic cycles. Even if the economy itself starts to taper off, many analysts think towards the end of 2018, again you still have that lag."

Powell adds, "the industry might start to see pockets of contraction in certain end markets over the next year or two, but likely won't see a broader downturn during this timeframe. What does that mean for the engineering market? We think we still have several years of runway." ■

Curtis Sprung is an editor for Imagination Publishing and is based in Washington, D.C.

Fifteen years can mean a lot of changes for an engineering firm.

For Omaha, Nebraska-based HDR, Inc., it meant growing from 6,236 employees in 145 offices a decade ago to 10,000 employees in more than 225 global locations today. It also meant making strategic decisions to drive that growth including repurchasing all company stock to become employee owned, expanding into new services, reorganizing engineering and architecture into regional formats, acquiring five companies, opening a Shanghai, China, office and transitioning to new leadership.

And three years ago, it meant reassessing the firm's brand by asking one simple question: Does our brand match who we are after all these changes?

"Things change a lot in our industry, and we've always been able to adapt by moving to where that change occurs," says Rex Fisher, senior vice president corporate relations for HDR. As the company

reaches its 100th anniversary in 2017, the firm began a one-year journey to refresh its brand, starting with a logo update and eventually moving to more complex tasks—client interviews, employee focus groups, new messaging and storytelling ads. Most important, HDR has instituted an ongoing training program with employees to make sure every employee understands and consistently delivers the company's new messaging.

"It doesn't happen overnight," Fisher says. "You have to spend a lot of time driving it deep into your organization at all levels."

Some of the common reasons for rebranding include a change of leadership, a merger or acquisition or when firms want to reposition themselves in the marketplace, according to Karl Feldman, account director at Hinge Branding and Marketing for Professional Services.

Even small brand changes can accumulate and ultimately affect your audience

over time. Regardless of the size and scope of your firm, it's critical that you're conscious of your brand, the message it's relaying and its impact on the marketplace.

MORE THAN A LOGO

"Your brand is not your logo or your colors," says Jen Newman, CEO of Ignite Coaching & Consulting, LLC. "Your brand is the feeling that people have when they hear your name. It's what people say about you when you're not in the room, and it's not determined by you."

The first step in learning what others think about your firm is to ask them. Waltham, Massachusetts-based Simpson Gumpertz & Heger, Inc. (SGH) has gone through two big brand efforts. The first in 2007 was a corporate rebranding program while the second involved a new online brand strategy in 2015.

In 2007, SGH enlisted a brand consultant who led the company through the internal process of asking principals and

BRAND

**Whether
keeping pace with
company growth
or anticipating a
resurging market,
don't overlook
the importance of
your company's
brand**



executives, “Who do we think we are?”

Next, SGH took that same question on the road to ask clients what they thought the firm represented.

“The circles overlapped somewhat,” says Jason Heroux, vice president of business development for SGH. “We were focused on what we bring technically and clients agreed, but technical acumen is expected from every firm. The things they thought differentiated us were our commitment to them and making sure a project gets done right, whether it was directly our responsibility or not—and our deep bench of various engineering capabilities.”

From there, the company was able to identify its market differentiator and a plan of action.

WHAT MAKES YOUR FIRM DIFFERENT?

“The more clear and specific you can be in how you talk about your brand, the

greater the momentum a company can create in the marketplace,” Feldman says. “People will know exactly how you fit.”

Prosaic statements such as “we’re local to the clients we serve” or “we have great people,” won’t do, Newman says. Instead, try another strategy. “What is your concierge client service?” Newman says. “What services do you offer that stand above the rest? It could be ‘we solve problems before the clients even think about them’ because we know them so well. Sometimes it’s as simple as ‘we’re responsive, and we’ll get back to you within 24 hours.’ It might be simple, but many firms don’t have that culture and that matters to your clients.”

Once the firm’s message and differentiator has been uncovered, the company must develop a course of action to spread the word. Often, two plans are required: one for internal communication and one in the marketplace through advertising,



“You have to spend a lot of time driving it [brand awareness] deep into your organization at all levels.”

REX FISHER | HDR

public relations and industry events.

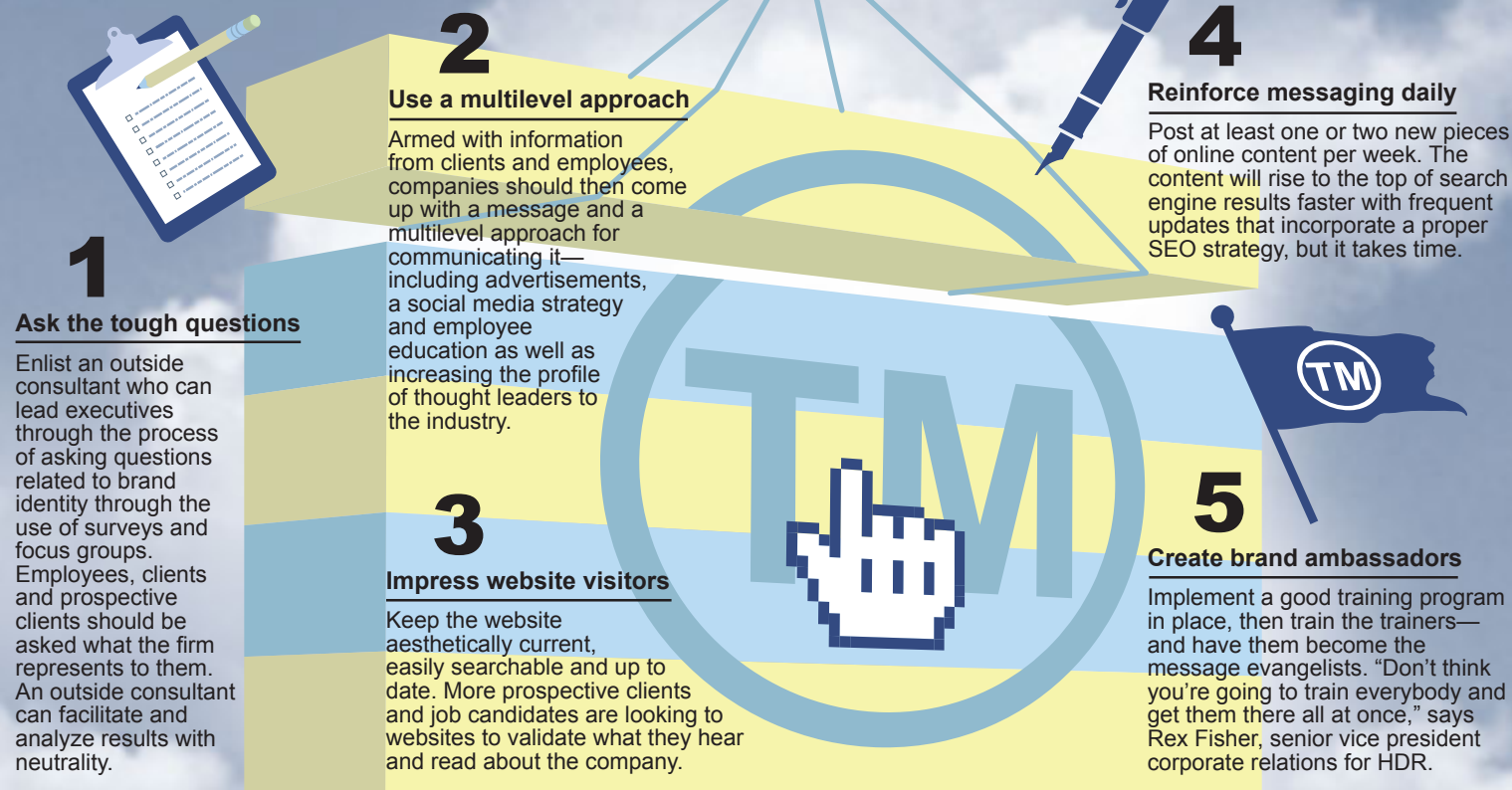
Years ago, firms would place an ad in a magazine with a clever headline and photos of a project. That’s no longer the case. “Now, people are looking for credibility in venues such as speakers at conferences,



BY STACY COLLETT

UPPERCUT IMAGES / GETTY IMAGES

Five Key Points to Building Your Brand



those talking about the latest trends, techniques or regulations. Or it’s being quoted in articles or producing content that’s not sales material,” says Feldman.



“It is amazing how recognizable your brand becomes when you are embedded in the community.”

RENEE LANE
C&S COS.

Furthermore, brand strength in professional services is measured by reputation and visibility. “You can’t see your reputation, but you can build up brand strength and visibility by sharing your knowledge in a thought leadership capacity, so you can develop trust,” Feldman says.

BATTLE OF THE BRANDS

So how would you approach trying to sell into a market where there already exist dominant players providing similar services as you? Mike McDermott, president of Bash Foo, an inbound marketing agency, says marketing teams are often faced with this branding challenge.

“When Lyft entered the scene, their competitor Uber already had a dominant market position,” McDermott says. “However, while Uber spent their time and coin battling in the headlines with taxi drivers, Lyft quietly grew as the

reliable alternative to the embattled ‘black car’ service.

“With bright pink logos, themed rides, and Lyft riders being encouraged to sit in the front seat, Lyft provides the same exact service of getting their customer to where they want to go. They simply chose to not be so stuffy and uptight about the ride experience,” he said.

Lyft still has to be careful with their branding decision. Things like low cost, an easy to use mobile app, a stable of good drivers and reliability of service are marks that Lyft must continue to hit.

McDermott recalled how similarly, Southwest Airlines knew that to compete in the cut-throat airline markets they’d have to do some pretty drastic things to get recognized and still stay profitable.

“You’ve probably heard of, or experienced, the inflight shenanigans of the Southwest flight crew. This choice to be the ‘entertaining’ one of the bunch, along with its desire to operate out of smaller airports within hub cities across the U.S. proved to be the winning cocktail for them over the past 35 years,” he said.

McDermott summarized, “in both of these examples, the companies chose to dive into these competitive markets with an understanding that at the core, they had to differentiate within an established product or service and make that differentiation inextricably bound to their brand.”

WEBSITE, SOCIAL MEDIA IMPORTANCE

Websites have become the information hub of a company’s brand. Prospective clients and job candidates go to a company’s website to verify what was said in an interview or in a project proposal. “If they can’t find it on your website, they immediately question what you’re saying about yourself,” Heroux says.

“Your website is an opportunity for you to design someone’s

first impression of you,” says Sarah Walpert, chief marketing officer for the brand consulting firm Ingenium. “It gives you the opportunity to tell them exactly what you want them to know, such as who you are, what you’re good at, why it’s great to work with you and the projects you’ve worked on,” she says.

A sleek website and a social media presence are also essential for attracting young talent, especially millennials and Gen X workers who do the majority of their job searching online, Walpert adds. “It’s the impression they get of a company when they go to their website, look up the owner on LinkedIn or encounter a company’s brand presence at a conference that attracts them to the firm,” she says.

A multilevel-branding approach also includes content marketing and a social media presence that enforces the company’s brand. The latest rebrand to the SGH website includes a regular cadence of new content that’s specific to the firm’s message. The website also allows visitors to sort through information quickly to find content that matches their interests.

“We’re putting content on our website and distributing through one of our social media sites, including Facebook, Twitter and LinkedIn, at least once a day and sometimes multiple times a day,” Heroux says.

The type of content posted—and its value to readers—matters a great deal. The firm updated its website by including news about successful projects, posting thought leadership papers and topic briefs that may have already been written for other purposes as well as publicizing the educational seminars it hosts. Additionally, SGH introduced video content, which brought even more traction to its website. “We’re getting thousands and thousands of views on projects that prior to the new website launch would not have been that widely viewed,” Heroux says.

Adding regular content integrated with an effective search engine optimization (SEO) plan also moves a firm’s name up higher in a browser search. The key is doing proper SEO research on keywords and topics that match a firm’s expertise, and then posting with both frequency and depth on those topics.

“There are still a fair number of firms that think of their websites as a brochure, and then they’ll say they’re not showing up on searches,” Feldman says. “It’s a natural consequence of not adding a lot of content. The search engines have



“We’re putting content on our website and distributing through one of our social media sites, including Facebook, Twitter and LinkedIn, at least once a day and sometimes multiple times a day.”

**JASON HEROUX
SIMPSON GUMPERTZ &
HEGER, INC.**

algorithms and will respond to those changes, but it takes time.”

How often should content be updated? There are a lot of variables, including resources and capacity, but a general rule of thumb is at least one or two new pieces of content a week. Most important, it must cover topics that are important to the firm’s target audience.

“If they’re blogging about trivial stuff or the firm’s latest anniversary, that’s not going to help,” Feldman says.

SGH has set a lofty goal for its online content. “We’re trying to capture 10 to 15 percent of our project work and as much as possible of our professional work, so that in 10 years we will have several thousand project and professional content pieces on our website,” Heroux says. “Then we expect to have improved search rankings on Google and very few holes when someone drills down and tries to find something on a very specific topic.”

To accomplish this objective, the firm has hired two full-time marketing writers who draft content pieces that are then edited by technical leaders to ensure accuracy.

EMPLOYEES AS BRAND AMBASSADORS

“Developing the brand doesn’t end with the project launch. It’s a continuous process of educating employees and reinforcing the message every day,” says Therese Nuckolls, global brand director for HDR.

To kick things off, HDR developed online training modules that explain to employees what the brand represents, how it should be communicated and what it means to their relationships with clients. All employees were required to take the course, which takes 90 minutes to two hours to complete, and it’s now mandatory for all new employees.

“We knew the rebrand would only be successful if employees actually believed in the brand,” Nuckolls says. “Employees are our brand ambassadors. Make sure they’re selling the company consistently with that new messaging.”

Brand ambassadors can represent the firm in many ways, including philanthropy.

“Our method is very sincere and simple. We give back to the very communities where we live and work by volunteering, donating and similar philanthropy,” says Renee Lane, director of PR and corporate communications for the engineering firm C&S Cos. in Syracuse, New York. “This promotes a tremendous amount of goodwill in the community and is also great for internal staff morale. It is amazing how recognizable your brand becomes when you are embedded in the community. It works at all levels, and it feels good, too.”

Lane adds that it’s difficult to measure the success of volunteerism and its effect on the brand. “But it is safe to say, our communities and clients certainly know who we are and all that we do for the communities,” she says.

Marketing and branding experts agree that rebranding a company takes time, but the benefits can last for years.

“A campaign or a tagline can change, but a brand is who you are, and that doesn’t change,” Nuckolls says. “While the look of our new brand might be contemporary, what we stand for is still exactly the same as it was 100 years ago.” ■

Stacy Collett is a business and technology writer based in Chicago.

Winning the Battle of the (Paper)



C.J. BURTON

Effective strategies for addressing document retention needs

In this age of the “digital business,” paper documents might seem almost quaint—especially to younger professionals.

But the fact is, many organizations—especially engineering and design firms—still rely on huge volumes of paperwork along with their ever-growing stores of electronic files. And the management and retention of all these documents is a critical legal and administrative issue for professional firms.

The basic questions seem simple: How long do I keep this paper/email/file/record, and what is the best method to store it? But the process of document retention can be challenging, especially if there are no guidelines in place. Engineering firms need to create and maintain a comprehensive strategy.

As with many other types of businesses, engineering firms are experiencing an unprecedented rise in the volume of information they must handle.

“With modern engineering firms generating an incredible amount of hard copy and electronic information in the form of email, reports, letters, calculations, plans, field documentation, etc., it is extremely important that firms adopt a document retention policy that

is specific to their own operations and needs,” says Jim Messmore, chairman, ACEC Risk Management Committee and senior vice president of Hanson Professional Services.

“It is necessary not only for the practical management of the documents but also from a risk management perspective,” Messmore says.

Design and construction projects typically involve copious amounts of paper and electronic records that are generated traditionally but also through increasingly varied means of communication, including cloud-based communication, emails, text messaging, voicemails and even social media, says Patricia Harris, special counsel at Zetlin & De Chiara, which advises engineering and design firms on document retention policies.

A document retention policy should be thorough, experts say, but it doesn’t need to be complex.

“It is important that a document retention strategy be easy to follow and comprehensive,” says Theodore Levin, a partner with the law firm Morris Polich & Purdy and also a member of the ACEC Risk Management Committee.

A good policy will cover basic information and lay

GE

BY BOB VIOLINO

out all the key requirements, Levin says.

That includes the types of documents to be retained; in what format they should be retained; the length of time particular documents need to be kept; the method and policy for destruction; how and when to suspend the policy (for example, during a “litigation hold”); and an efficient filing system for the organization of records.

“In addition, the policy needs to be practical enough to allow easy compliance and flexibility but can be uniformly applied as much as possible,” Levin says.

Although there are commonalities across all document retention programs, firms should customize their strategy as needed. “A document retention strategy needs to be tailored to the specific needs of the firm and its clients,” Messmore says. “The policy should have consistent protocols for the project types that the firm undertakes. Not all project types have the same risk profile, so in some cases certain project records can be disposed of sooner than others.”

Just as importantly, firms should have policies for managing records in each phase of the ‘document life cycle’—acquisition, storage, usage/access, distribution/sharing and archiving or purging records, Harris says.

THE RELEVANT LAWS

When establishing a records retention policy, firms should refer to various sources to set appropriate retention periods, Harris says.

For project records, where the establishment of retention periods can be particularly complex, firms should first look to the statutes of limitation and repose of the state where the project is located, and plan to hold documents for at least those periods.

Second, the project contract itself might contain responsibilities regarding post-project records retention. Finally, certain states may have legal or regulatory document retention requirements specifically for design professionals, Harris says.

For example, a New York Board of Regents rule requires a licensee to maintain for at least six years “all preliminary and final plans, documents, computations, records and professional evaluations prepared by the licensee, or the licensee’s employees, relating to work to which the licensee has affixed his seal and signature.”

Storing records electronically is the most cost-effective option, Harris says, but it is also the option that most threatens the integrity of the records.

A rule of thumb is to preserve documents for at least the statute of repose in your state plus six years

"If paper records are ultimately to be retained electronically, the firm should have quality-control procedures that ensure the information stored retains its original content, context and structure," she says.

In addition, firms must be prepared to address hardware, software and media obsolescence from time to time so that records remain accessible as long as they are required to be, Harris says.

NEW MEDIA

Firms must keep in mind new methods are always emerging for the creation and storage of records.

"In the last several years, we have been advising clients to focus on their policies regarding approved 'means of communication,' in order to limit where records may end up," Harris says. For instance, employees should not use personal email accounts for business communications, texts should be limited to administrative items such as setting up meetings, and any discussion of projects through social media should be prohibited unless specifically authorized by firm management or a specific point person.

And all staff members need to understand the policies.

"A firm can have an excellent records management and retention policy, but if it fails to communicate the policy to its employees, then there might as well be no policy in place," Harris says. "We recommend an oral presentation or discussion for all new employees plus an annual meeting for all employees to review the firms' policies and expectations."

If the firm distributes a written policy, it might be a good idea to have each employee sign a written acknowledgement that he or she has read it, understands it and agrees to abide by it, Harris adds.

Firms should also stress that document retention needs to be taken seriously throughout the organization. "It does no good to have a policy that everyone ignores," Levin says.

LITIGATION AND YOU

Document retention that is taken lightly could come back to haunt firms, specifically in the event of litigation.

"Documentation is important for defending cases," Levin says. "If you don't have the documents, you can't prove what you did on the project and what you did not do on the project. To a large degree, it is true that if it isn't in writing, it didn't happen—a large number of construction disputes resolve by settlement, but it is still necessary to prove your case through the use of documentation to achieve the best result."

If a firm does not have a strategy, piecing together documents when you

need them will be difficult. "Each person who worked on a project file may have done something different with their documents," Levin says.

Another risk is being accused of "spoliation" of evidence if documents are destroyed without following a policy. "A rule of thumb is to preserve documents for at least the statute of repose in your state plus six years," Levin says. "For example, if the statute of repose in the engineer's state is 10 years, it would be conservative to preserve the documents for 16 years—the 10 years, plus five years maximum to take a lawsuit through trial and one year to account for indemnity claims."

Legal and regulatory requirements regarding maintaining records are ever evolving, Harris says.

It is crucial that firms have a policy that allows for suspension of any document disposal or destruction in the event of anticipated, threatened, pending or actual litigation. "I cannot stress enough that the document disposal and destruction should stop prior to the receipt of an actual complaint," Harris says. "If you think a problem may be on the way, then preserve your records."

Given the speed at which communications technology is advancing, firms may want to revisit their records management and retention policies every three years or so, according to Harris.

Being vigilant about the management of records is well worth it.

"From our experience as attorneys involved in complex construction cases, companies that have a well-thought-out records retention policy and also follow that policy will fare much better should litigation arise," Harris says. ■

Bob Violino is a business and technology writer based in Massapequa Park, New York.

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"If paper records are ultimately to be retained electronically, the firm should have quality-control procedures that ensure the information stored retains its original content, context and structure."

PATRICIA HARRIS |
ZETLIN & De CHIARA



"It is extremely important that firms adopt a document retention policy that is specific to their own operations and needs."

JIM MESSMORE |
ACEC RISK
MANAGEMENT
COMMITTEE



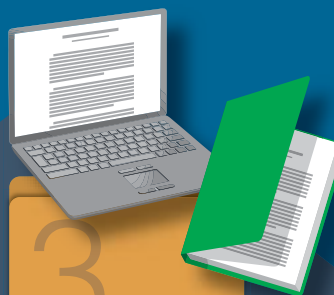
Identify records by type

Types of records might include business and financial records, tax filings, evidence of intellectual property, licenses, insurance documents, personnel records, contracts and work product.



Prescribe length of retention

Most business and intellectual property records should be kept permanently; other types of records are typically keyed to statute of limitations periods, statute of repose periods, contractual requirements and, for design professionals, ethical or other regulatory requirements.



Define method of retention

Records can be stored in original media or electronically. If the records are to be converted to electronic records for purposes of storage, the firm must ensure that the content, context and structure of the original records remain intact.



Establish ability to access records

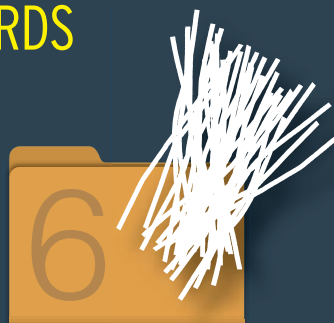
The firm must identify who will have access to stored records. It should periodically review the format of those records that have been stored electronically and that such records remain accessible in light of changes in technology.

8 STEPS FOR AN EFFECTIVE RECORDS RETENTION POLICY



Provide authority in the event of uncertainty

Define a chain of command within the records management team. Often, old records will need to be accessed only if litigation arises, so decision-makers should be selected with that in mind.



Establish destruction policies and methods

Define destruction milestones, particularly in the context of projects and project close-outs, when most people are involved with the records. Set policies to minimize that data is out of the company's control, e.g., on personal devices. Make sure that destruction of paper and electronic records is thorough and complete.



Communicate the policy

In addition to communicating the records management policy in writing to all employees and obtaining their written agreement to abide by the policy, an effective policy will minimize individual discretion in each of the steps above.



Construct rules to apply in light of pending or threatened litigation

These rules should include identifying a team to oversee the process of a "litigation hold," developing a plan to preserve and/or suspend destruction of all records that might be related to the litigation, creating policies regarding distribution of a litigation hold notice, ensuring compliance with the litigation hold, modifying the hold if necessary and removing the hold when allowable.

ONE FOCUS. ONE PASSION. ONE NETWORK.

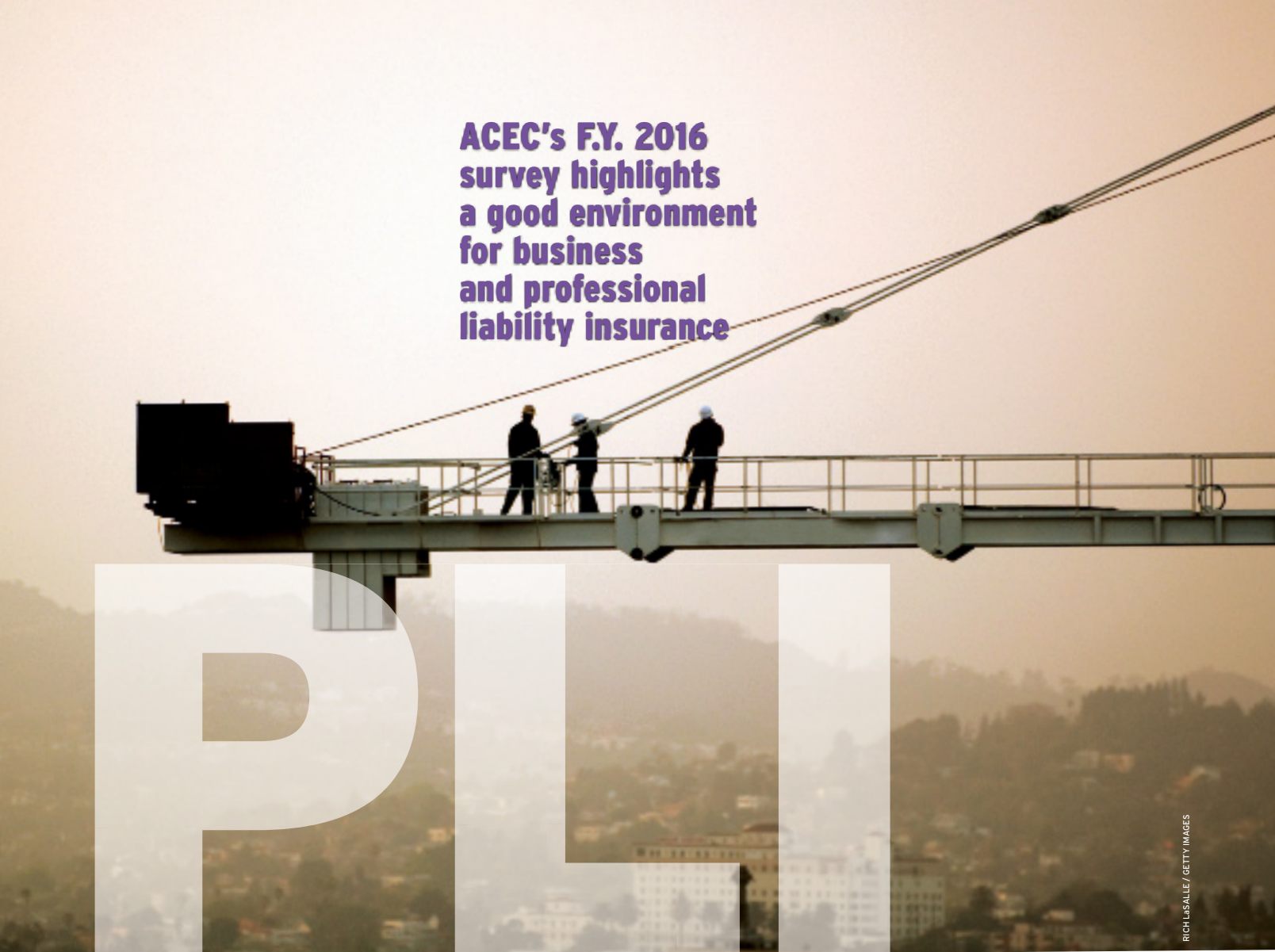


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ACEC's F.Y. 2016
survey highlights
a good environment
for business
and professional
liability insurance

It's A Buyer's Market

BY MAUREEN CONLEY

Business is booming, professional liability insurance (PLI) rates remain low, and the frequency of claims is holding steady—outstanding news for design professionals, according to analyzed data from ACEC's Fiscal Year 2016 PLI Survey of Member Firms.

Most experts who track these measures found few surprises in the annual survey, conducted Feb. 10–March 20, 2017.

Kevin Collins, senior vice president, professional liability at Victor O. Schinnerer & Co., is seeing firms' revenue increase an average of 4 percent for the first quarter of 2017, compared with the same period last year, and consistent with growth over 2016. Collins notes that growth is weighted toward civil engineering firms, particularly those heavy on infrastructure projects. The survey found 61 percent of the 411 respondents experienced growth last year, compared with only 19 percent that saw decreases. Fields of practice reporting the broadest growth were structural (77 percent), water/wastewater (73 percent), civil/general (67 percent) and mechanical/HVAC (66 percent).

RICH LASALLE / GETTY IMAGES

PREMIUM TIPS

When it comes to premiums, Al Rabasca, director of industry relations at XL Catlin, says that as a percentage of revenue they remain historically low, and rates remain affordable for the vast majority of firms. On average, premiums are down 7 percent from fiscal year 2015. Mary Lodwick, president of Phoenix-based Stuckey Insurance and the current president of the Professional Liability Agents Network (PLAN), says it's a "buyer's market, with tons of carriers and rates going down."

Even with so much good news, 12 percent of firms changed carriers, and of those, 72 percent cited lower premiums. A majority of firms (64 percent) asked their brokers for multiple PLI quotes at a time when most are growing, notes Matt Richards, vice president of Strand Associates and co-vice chair of the ACEC Risk Management Committee. Richards wonders whether growing firms will continue to focus on PLI cost or look more at factors such as pre-claims assistance, risk management programs and claims handling.

"Maybe the firms that changed carriers saw rate increases at renewal, or perhaps they were shopping rates and not shopping experience," says Dennis Stryker, general counsel for Rick Engineering Co. He advises against that mindset with premiums so low—a median of 1 percent of revenue or less for firms grossing \$2.5 million or more each year.

"There used to be a greater distinction on policy forms," says Michael Welbel, vice president of Risk Strategies Co. and president of a/e ProNet.

Now the top tier of insurers has become homogenous in terms of key features, Welbel says. While some carriers may offer much lower rates, they might be lacking in key aspects, resulting in problematic exclusions, lack of risk management support, or no dedicated claims team, he says. For example, when a carrier comes in far below its competitors, Lodwick says, that can be a red flag. "There's a reason everyone else is where they are. This new guy hasn't figured out the secret of PLI," she says. With claims not following rates lower, at some point these low rates will become unsustainable, she says.

When choosing a carrier, firms should look not just at the premium but also at the value that a carrier can add to their

business. Rabasca says when designers buy insurance, it's not just a policy. "It's a program that includes risk management and education. XL's insureds that go through those programs become better insureds but also become better businesspeople," he says.

MANAGING RISK

Although 66 percent of firms have no outstanding claims, the survey found that only the largest firms (over \$20 million in revenue) have in-house counsel or full-time risk managers. This leaves the principal



"Good project management practices are a great way to mitigate risk—having really experienced people, trying to manage projects very tightly."

JEFF ASHER | KPFF

or a chief executive in smaller firms with the responsibility of bringing in business and managing risk.

"It's important to be smart about project and client selection, and finding good people to do the work," says Jeff Asher, principal and chairman of KPFF.

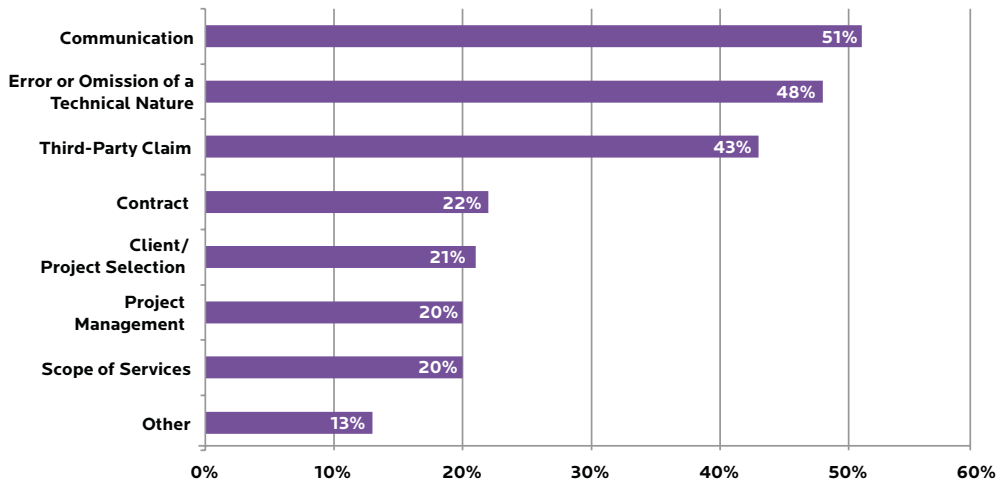
KPFF rarely turns down work, unless a project isn't a good match. That may mean a schedule is not realistic, not enough capital has been allocated, or there may not be the right technical capabilities to get a project done. "Good project management practices are a great way to mitigate risk—having really experienced people, trying to manage projects very tightly," Asher says. "If none of those things work, or it's just unmanageable, sometimes we'll walk away."

Rick Engineering might turn away work when the risk outweighs the fee—or the contract



Member Firm revenue is up an average of 4 percent for the first quarter of 2017, compared with the same period last year

Causes of Claims



terms are too one-sided to accept the risk, Stryker says. His firm has taken on a risky project where it had a decent relationship with the client or knew from the client's reputation that there would be some avenue of redress should a problem occur. But the firm still needs to be smart about putting the right team in place, Stryker says.

Stryker values the risk management educational programs offered by Rick Engineering's PLI carrier, including videos that are easy to access. KPFF has its own well-developed in-house risk management program that Asher says the firm "takes seriously and practices with regularity," so it is embedded in the firm's culture. KPFF also encourages openness and trust so that employees feel safe raising a problem early—before it becomes a claim, he says.

CLAIM EVALUATION AND FREQUENCY

For XL Catlin, the initial focus when a claim arises is whether an insured is legally liable. Rabasca says neither the insured nor the carrier can settle a claim without the other's consent. James Schwartz, U.S. A&E focus group leader for Beazley, says the firm begins the claims process with a realistic evaluation of any liability and exposure. The insurer evaluates that information along with the cost to proceed to litigation and the interests of the client. "Often they want to fight, and they don't appreciate what it will take to do that," Schwartz

know who took it and you have the right to use it," he says.

While claims frequency is stable now, Collins says firms may begin to see an uptick as they take on more work. He urges designers to look for a strong partner, focus on finding good people, investing in risk management and quality control procedures, and exercise caution in project selection and contract review.

says. Ultimately, most cases are resolved before trial, he says.

Though claims frequency has remained steady since the Great Recession, severity is up, says Rabasca. The top three causes of claims remain communication (51 percent), followed closely by technical errors and omissions (48 percent) and third-party claims (43 percent).

There's one emerging issue Schwartz is seeing: copyright claims, caused mainly by people who don't fully understand copyright protections. These often occur when the designer posts a project photo they do not own. "Don't use a photo unless you

CARRIER PROGRAMS

"Many carriers are unveiling new risk management services, such as contract guides, webinars, newsletters and other educational materials," says Lodwick. Long-term insurers in the design PLI market already have these programs, and newer entrants are joining in to compete in the market, Lodwick says. But she doesn't think design firms are demanding these services inasmuch as the most common factors firms cite for changing carriers are the ability to offer higher limits and additional coverage benefits, such as first dollar defense and lower deductibles.

Welbel says many insurers are adding new offerings, such as privacy coverage and crisis management, but they don't typically lead to a change in carrier. "Those features are nice, but they're usually not enough," he says.

"Carriers offering those additional coverage benefits that address fee disputes, for example, could convince a firm to switch carriers," says Dino Fidanza,



"Many carriers are unveiling new risk management services, such as contract guides, webinars, newsletters and other educational materials."

MARY LODWICK
STUCKEY INSURANCE AND
PROFESSIONAL LIABILITY
AGENTS NETWORK



EZRA BAILEY / GETTY IMAGES

senior vice president at Marsh, program administrator for the ACEC Business Insurance Trust. “Some carriers are starting to offer a multiyear policy period, which is attractive for some firms because they can budget the cost of insurance for greater than one year,” he says.

Chuck Kopplin, past chair of the ACEC Risk Management Committee, notes many similarities with recent surveys—with one exception. Some smaller carriers are scoring marked improvements in reported satisfaction with their risk management and claims handling programs.

THE BROKER'S ROLE

As it turns out, coverage enhancements aren't the only key factor in how firms choose PLI. Brokers play a large role in the decision-making process, the survey found.

Firms were asked to rank in order of importance the factors they consider when choosing PLI. The No. 1 answer is broker recommendation, ranked first by 29 percent of respondents. Fidanza says the insurance broker should be considered a firm's partner, not a vendor. He encourages firms to educate their broker about the intricacies of the firm's business model, so the broker can recommend potential policy enhancements and identify places where your policy may fall short.

Welbel says a good A/E broker will provide counsel to a firm evaluating a project's risk. “Is there a reason they should back off? How can we make the contract better? We might provide alternate language to keep exposure within what is reasonable. Brokers know the coverage and the market and can match a firm with the right insurer.” They also have the inside line on who handles claims the best and who can offer higher limits, Lodwick says. And they have a very good understanding about the quality of a carrier. “Not just on price, but their longevity in the market, claims experience and overall service,” she says.

CONTRACT TRENDS

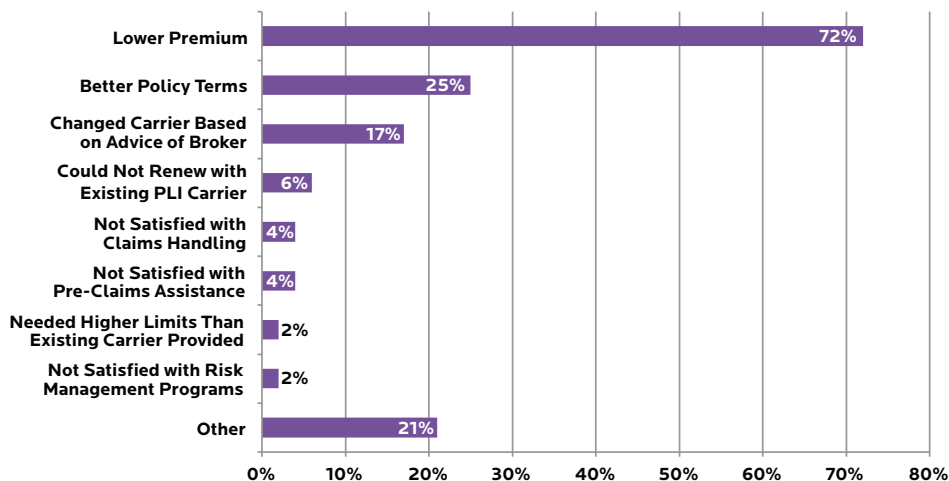
These days, it is more the exception than the rule for project owners to ask designers to carry higher limits, Lodwick says.



“Some carriers are starting to offer a multiyear policy period, which is attractive for some firms because they can budget the cost of insurance for greater than one year.”

DINO FIDANZA | MARSH

Reasons Firms Changed PLI Carriers



“The norm was to have a \$1 million limit, regardless of firm size,” she says. But during the recession, owners began asking larger firms for higher limits. “Now, even smaller firms are getting higher limit requests,” Lodwick says.

Asher has seen contracts become more onerous in recent years, with language aimed at trying to gain some perceived advantage. “Tough contract language can be hard to insure. And it's hard to manage the risk,” Asher says.

Indeed, the cost of defending against claims is high—firms spent \$56 million and 30,000 personnel hours during fiscal year 2016. The survey shows 94 percent of all claims were resolved before trial, and 89 percent were settled within the deductible. “Claims take disproportionately more time than a new project,” Stryker says.

Kopplin encourages firms to be proactive in handling issues as they arise. Everyone working together on a problem will have a better outcome than one person working alone, he says. “Problems don't get better with time,” Kopplin added. ■

Maureen Conley has more than 25 years' experience writing about science, engineering and government policy in Washington, D.C.



Higher AND Higher

**MEMBER FIRMS PUSH
THE LIMITS TO DESIGN
EFFICIENT AND ATTRACTIVE
HIGH-RISE STRUCTURES**

BY TOM KLEMENS

PROJECT: Lotte World Tower
Seoul, South Korea

FIRM: Leslie E. Robertson Associates

PROJECT: 111 West 57th Street
New York, New York

FIRM: Jaros, Baum & Bolles

PROJECT: Lincoln Square Expansion
Bellevue, Washington

FIRM: Hart Crowser, Inc., and CKC
Structural Engineers

Supertall Tower Features Open Floor Plans

PROJECT: LOTTE WORLD TOWER
SEOUL, SOUTH KOREA

FIRM: LESLIE E. ROBERTSON
ASSOCIATES, NEW YORK, NEW YORK

At 1,820 feet tall, the 123-story Lotte World Tower is South Korea's first supertall building and the fifth-tallest building in the world. With structural design by Leslie E. Robertson Associates (LERA), the \$2.5 billion tower and adjacent development includes office, retail, hotel and officetel space—the latter a combination office and apartment common in Korea. The tower also includes parking, a museum and observation space.

Although the tapered shape of the building is effective at minimizing wind loads, it led to challenging structural complexities. The tower's primary lateral load and gravity systems consist of eight concrete mega-columns—10 feet, 9 inches square at ground level—and concrete core walls. In addition, a series of outriggers and belt trusses transfer the top diagrid structure loads to the column configuration of the hotel floors, as well as the columns of the hotel floors to the mega-columns at the officetel and office floors. Two levels of outriggers tie the perimeter mega-columns to the concrete core to control the tower's

drift and lateral accelerations due to wind loads.

"We worked closely with the architects to strike a balance between the structural efficiency gained by adding columns and the need to preserve open floor plans," said SawTeen See, managing partner at LERA. The owner, Lotte Group, selected a system of long-span spandrels for the office and officetel floors, with spans of up to 80 feet between mega-columns. The spandrels cantilever 46 feet beyond the mega-columns at the building corners, bending to follow the building's curved floors. To meet the stringent deflection and vibration floor criteria in these areas, LERA designed a series of one-story-high deflection control posts on every other floor, aligned with the cladding mullions. Higher up, the hotel floors—flat slabs with drops—are supported by perimeter steel columns spaced to align with the room partitions and transferred through belt trusses. Sloping concrete core walls in the middle third of the building and columns sloping in two directions create a unique environment on each floor.

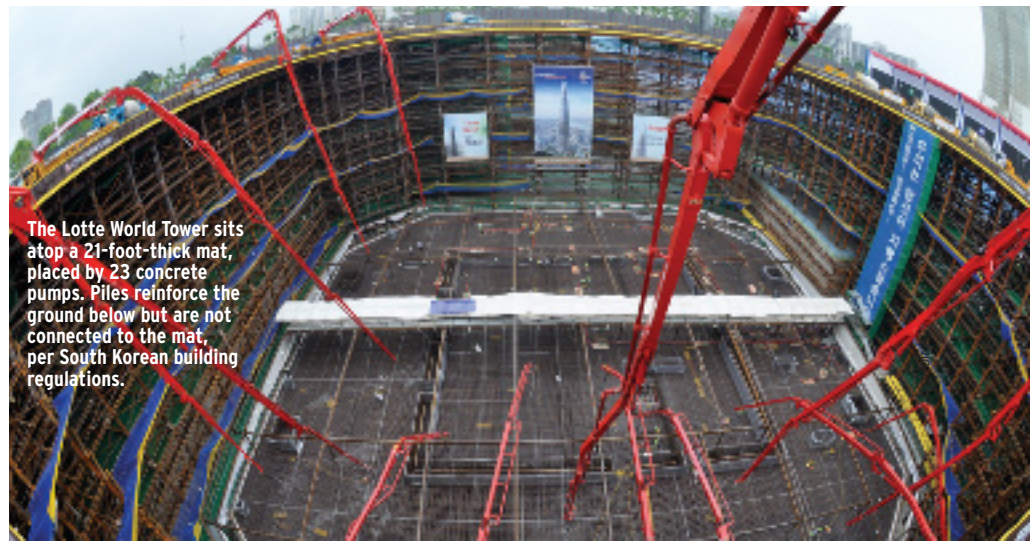
"The design for gravity and lateral loads from wind and earthquakes is only one element of a grander structural design," See said. "As with our many significant projects, robustness and redundancy were foremost considerations in designing the Lotte World Tower."



SawTeen See

The 123-story Lotte World Tower, South Korea's first supertall building, is the fifth tallest in the world.

The Lotte World Tower sits atop a 21-foot-thick mat, placed by 23 concrete pumps. Piles reinforce the ground below but are not connected to the mat, per South Korean building regulations.



Reinventing a Manhattan Tower and Landmark

The 1,428 foot tower at 111 West 57th Street in New York, New York, is only 60 feet at its widest point.

PROJECT: 111 WEST 57TH STREET
NEW YORK, NEW YORK

FIRM: JAROS, BAUM & BOLLES
NEW YORK, NEW YORK

In a creative blend of old and new, the fabled Steinway Hall on New York's West 57th Street will soon begin a new career, its atrium serving as the elegant main entry for a supertall high-rise now under construction on the adjacent site. Featuring progressively greater setbacks on its northern face for a feathered rather than stepped profile, the new 1,428-foot tower's glass curtain walls will offer unparalleled views of Central Park to the north and the Manhattan skyline to the south. Harkening back to the quality and detail of historic New York towers, the shear walls on the east and west are being clad with a custom-cast terra cotta,

bronze filigree and glass façade.

Jaros, Baum & Bolles is providing mechanical and electrical engineering, with structural engineering by WSP USA. The design combines the original Steinway building—a designated landmark—with a slender new tower featuring full-floor and duplex apartments.

"This is truly a vertical building, in the sense that everything about the MEP systems is about going up and down," said Scott Frank, partner with Jaros, Baum & Bolles. "There's very little going side to side because the floor plates are so small." The tower is only 60 feet at its widest point. Height compounds the problem, so plumbing and heating systems have been divided into smaller packages, so they can be accommodated by commer-



Scott E. Frank

cially available products in the residential units.

The building's electrical distribution system also presented a challenge. "We're stepping up

the voltage from the utility company to 5,000 volts, and bringing that up the building to substations and transformers higher up," Frank said. "This reduces the amount of copper required in the building, and also results in less energy being lost on long cable runs."

The building's unique profile left no room for standard rooftop chillers. Engineers opted to locate an air-cooled chiller plant atop the existing historic building where it extends beyond the new tower, relatively close to grade.

Construction on the 111 West 57th Street project began in 2014, with completion expected in 2019.

Two-Tower Project Leverages Seismic Design

PROJECT: LINCOLN SQUARE EXPANSION
BELLEVUE, WASHINGTON

FIRM: HART CROWSER, INC.,
SEATTLE, WASHINGTON, AND
CKC STRUCTURAL ENGINEERS
BELLEVUE, WASHINGTON

The Lincoln Square Expansion (LSE) includes two 450-foot-tall towers—currently among the tallest in the area—connected by a three-level retail podium building with six levels of subterranean parking for 2,200 cars over a two-block site in Bellevue, Washington. The 2.6-million-square-foot mixed-use project includes a 41-story tower featuring

an upscale hotel, luxury apartments and a 31-story office tower providing 700,000 square feet of Class A office space. Building height, excavation depth, regional seismicity and other factors dictated a peer-reviewed, performance-based design that required numerous innovations. These included an optimized shoring system, record-breaking mat foundations, state-of-the-art seismic design, subterranean post-tensioned slabs and shrinkage control as well as steel fiber reinforced concrete coupling beams.

All structures on the site were demolished before construction with the exception of the Bellevue Arts Museum (BAM) on the corner. Constructing the LSE's six levels of subterranean parking required an 80-foot-deep excavation that would not undermine the BAM's foundation or adja-

cent streets and utilities. The design team developed an optimized shoring system using a combination of soil nails, tensioned soil nails, soil nails with vertical elements, and soldier piles with tiebacks to accommodate the garage-level vehicle tunnel.

The design team used performance-based seismic design (PBSD) procedures for the two towers. This is the first project in Bellevue to consider amplification effects of the geologic depression known as the Seattle Basin for seismic design. In the PBSD process, the geotechnical engineer evaluates the seismic hazard, then selects and scales ground motions representative of the earthquake faults that contribute most to the site hazard.

Doug Lindquist, principal geotechnical engineer with Hart Crowser, was part of a

team of engineers that went to Japan to gather data after the Tōhoku earthquake and tsunami. "We have that same hazard off our coast, and we were able to incorporate some of the Tōhoku earthquake ground motions into our design," Lindquist said.


Above grade steel fiber reinforced concrete in 87 percent of the 392 coupling beams eliminated the need for diagonal reinforcement and made building the towers' core systems much easier.

"With a steel fiber dosage of 200 pounds per cubic yard, using a self-consolidating concrete produced workability similar to a traditional high-slump mix," said Mark Whiteley,

principal with CKC Structural Engineers, the project's structural engineer.

Tenant build-outs in the Lincoln Square Expansion were underway in 2017, the hotel was expected to come online in May and residences in the fall of 2017. ■

Tom Klemens is a freelance writer based near Chicago and is a registered Professional Engineer in Illinois.



The office tower and the hotel/residential tower in the Lincoln Square Expansion are two of Bellevue's tallest buildings.



Doug Lindquist



Mark Whiteley

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A CULTURE OF COMPASSION

McMahon Associates, Inc., a Pennsylvania-based transportation engineering firm, turned a milestone anniversary into an opportunity to establish an employee volunteer program

BY CALVIN HENNICK

Members of the McMahon Associates, Inc.'s Mid-Atlantic regional office participated in The Lemon Run to fight childhood cancer.



Community involvement has been central to the culture of McMahon Associates, Inc. since the firm was founded in 1976. Over the years, employees have raised money for charity, organized math competitions for schools and swapped out their traditional holiday gift exchange in favor of donating to Toys for Tots. But as the firm celebrated its 40th anniversary in 2016, employees decided to put a more formal structure behind their efforts, creating an initiative called McMahon Gives Back. Each of the firm's offices participated in community service events last June—efforts that ranged from harvesting crops for a food bank to serving meals at a Ronald McDonald House and preparing food at a soup kitchen.

“We started doing these events because we enjoy it,” says Joseph DeSantis, president of the firm. “Now that we have a moniker for it, and an umbrella program, we can look for more opportunities, and schedule and budget for them.”



Employees from McMahon's Fort Washington, Pennsylvania office work to improve a home for the Inter-Faith Housing Alliance.



The West Palm Beach, Florida office cleans the beach at Ocean Ridge Hammock Park.



McMahon Associates, Inc. employees from the Exton, Pennsylvania office harvest crops for the Chester County Food Bank.



"I think it's in our employees' nature to help people if there's an opportunity."

JOSEPH DESANTIS | McMAHON ASSOCIATES, INC.

While McMahon employees have always volunteered, DeSantis says the new framework is helping the company put an even greater emphasis on giving back. "When you're an engineer, you want to make things better," he says. "I think it's in our employees' nature to help people if there's an opportunity. Now, because we have a more official program, there's even more of a purpose behind it."

THE LOCAL CONNECTION

On a warm evening in June 2016, employees in McMahon's Fort Washington, Pennsylvania corporate headquarters made their way after work to Hope Gardens, an eight-unit apartment complex operated by the Inter-Faith Housing Alliance, which serves families with children who are experiencing homelessness in Montgomery County, Pennsylvania. Twenty McMahon employees deep-cleaned the apartment, ripped out old carpeting, painted walls and performed landscaping work on the premises, to get a four-bedroom unit ready for a new family.

"It was hard work, but we definitely enjoyed it," says Lindsay Sienkiewicz, human resources manager. Sienkiewicz organized the event and also spent her evening scrubbing the apartment's stove and refrigerator. "It was hot, and people had worked all day, so they were tired. But people rolled up their sleeves, got

into it, and they were just very engaged in the whole project."

The Hope Gardens facility provides transitional housing for families, giving them a place to live for up to two years while they prepare to move into market-rate housing.

"It's local people that are having a difficult time in their lives, and if we could go over and spend a few hours to help someone, it was just a really nice opportunity," Sienkiewicz says. "You want people, when they're experiencing a difficult time, to have a really nice space to come home to."

McMahon employees brought with them donations of household items to help the family get situated, including towels, bathmats, a shower curtain, a coffee maker as well as pots and pans. Months later, the company sponsored the family, donating clothes and toys from a wish list during Christmastime.

Sienkiewicz says it was meaningful for employees to have a direct impact on the living situation and holiday season of a local family. "It's not just us sending money to an organization that there's no connection with," she says.

Lauren Kormanik, community resource manager at the Inter-Faith Housing Alliance, calls McMahon's contribution "invaluable."

"In one day, I think they did three days' worth of work," Kormanik says. "Our goal is for the family to feel really good and proud of where they're living and to be comfortable in their new home."

A JOINT EFFORT

Before McMahon Gives Back was started, the company's New England region put together a list of ways individual employees in the region were already giving back within their communities. The list covered an entire page. It included pro bono work, serving on town planning boards, volunteering at school career days, judging science fairs and running in charity races.

While employees actively volunteered as individuals, they hadn't come together as a region to participate in a united effort.

Last June, employees from each of McMahon's New England offices were invited to a cleanup day at Borderland State Park in North Easton, Massachusetts. The event attracted 30 employees who spent the afternoon picking up trash, landscaping gardens surrounding a historic mansion at the park and performing other cleanup duties.

"It was a really fun day," says Maureen Chlebek, general manager of two of the firm's New England offices. "We thought it would be nice to get the whole group together. We were really interested in giving back to the community, but we were also looking for a team-building component to our effort."

Chlebek says that while McMahon has always supported

The Fort Washington, Pennsylvania office serves as guest chefs at the Philadelphia Ronald McDonald House.



employee volunteering, she expects the new program will help offices to be more consistent in their efforts. "When something isn't formalized, all of a sudden a year goes by, and you realize you never got back to it," she says. "It's not because you didn't mean to, but other priorities come up. This is a way to make sure you stay committed."

COMPANY CULTURE GETS A BOOST

In McMahon's Florida region, employees took to the beach on a rainy summer day, armed with gloves and trash bags, clearing a mile-long strip of sand in Palm Beach County.

The No. 1 find? Beer bottles, according to Trent Ebersole, general manager for the region. Next were food wrappers, followed by random bits of plastic. "Someone breaks an umbrella, or a wheel falls off their cooler, and people just leave it in place," he says. "Most employees filled their bag to the brim, and some people emptied that and got more."

Employees chose the beach cleanup in a vote, and Ebersole says that everyone enjoyed the event. But this year, he says, the region may opt for something interactive. "It seems, throughout the company, that the offices that did things that helped people felt like they connected to the project a little more," he says. "Moving forward, we'll probably do something more like a food bank, something charitable toward other people or maybe an event at an animal shelter, as opposed to a physical cleanup."

Still, Ebersole says, the McMahon Gives Back program sparked his region to be more deliberate when scheduling volunteer events. "In the past, it was more spontaneous," he says. "We want to schedule it more, so we don't let too much time slip by before we do something."

"When there's something emotionally positive happening, it makes everything better," Ebersole adds. "Even sitting here and working in the office is better when you feel like there's more to it than putting in 40 hours and getting a paycheck. It's pushed the whole organization in the right direction."

LOOKING AHEAD

Employees throughout McMahon have responded positively to the McMahon Gives Back program. "It was tremendously beneficial," says Christopher J. Williams, vice president and associate manager for the firm's Mid-Atlantic region. "It paid off in more ways than we could have expected. Not only did we have an opportunity to give back to our local community, but it was a great team-building event, to have people doing something with their co-workers outside of the engineering environment."



"We were really interested in giving back to the community, but we were also looking for a team-building component to our effort."

MAUREEN CHLEBEK | McMAHON ASSOCIATES, INC.

A Daughter's Lasting Legacy

When Casey Moore's daughter was undergoing treatment for a brain tumor, either he or his wife was always at her side.

"That meant so much to us," says Moore, the Mid-Atlantic vice president and regional manager for McMahon Associates, Inc. "I was able to keep my position because the company allowed me the flexibility I needed for my daughter. Putting family first has always been an important element of working for McMahon."

But Moore and his wife noticed that other children in the hospital were sometimes alone, and they saw families struggling to afford noncovered expenses from medical and palliative care.

Moore's daughter died from her illness in 2005, when she was only six and a half years old. In lieu of flowers, Moore and his wife asked family and friends to contribute to the Erin Delia Moore Fund for Children with Cancer. The fund, which has raised between \$250,000 and \$300,000, pays out money to other charities that support families whose children are being treated for cancer.

McMahon Associates, Inc. has supported the fund through annual contributions, and employees have run in road races to raise money for it.

Many people who support the fund are inspired by their interactions with Erin. "She's my real-life hero," Moore says.

Williams says that younger workers, in particular, respond favorably when a company prioritizes community involvement. "The engineers that are graduating college are very interested in working for a company that not only provides a good job but is also socially responsible," he says. "We didn't go into this with that goal in mind, but that's been a secondary benefit."

The first year of McMahon Gives Back, Williams says, has provided an "eye-opener" about the benefits of formalizing a volunteering program. "It's something we're looking to carry forward, to provide those give-back opportunities as part of our ongoing programming," he says. "This really kick-started our interest in making this a part of our culture here at McMahon." ■

Calvin Hennick is a business, technology and travel writer based in Milton, Massachusetts.

You Can't Choose Family...But, You Can (and Should) Choose Clients and Projects Wisely

BY GLEN R. MANGOLD AND CHARLES W. KOPPLIN

It is something firms do all the time: Choose a client and a project and then pursue them.

However, that seemingly simple process has some not so simple implications for firms: Client and project selection is a contributing factor in 21 percent of professional liability claims for all firms according to ACEC's recently completed 2017 Professional Liability Survey. (That number increases to 31 percent for firms with gross revenues exceeding \$20 million).

To reduce professional liability claims, firms should create specific criteria for how they select clients and projects. Objectively evaluating clients and projects to determine if they are a good fit for the firm can ultimately improve a firm's bottom line by minimizing risk and increasing their financial success.

First, establish criteria for client selection. Examining the firm's history with the client is a good place to start: Has the firm worked successfully with the client in the past? Is the client a good prospect according to the firm's marketing and strategic plans? If the firm has not previously considered the client or the client offers little chance for repeat business, then does that client really align with the firm's strategic goals? Has the firm been asked to submit a proposal for a project it has been following since its inception or did the firm only learn about the project when it received the request for a proposal?

However, successful project history with the client is not the only thing that matters—payment history is just as important. All things being equal, the client that pays an invoice in 30 days is preferable to one that takes more than 90 days to pay. Many firms have found themselves better off after they fired a client that did not promptly pay their invoices.

Criteria should also include a look at the sector in which the client does business. For example, school boards, church building committees, condominium associations and real estate developers come with their own set of risks. Association boards and committees may be without a group leader or could have competing interests with ever-changing agendas. Condominium liabilities include poor and deferred maintenance by the owners with some condominium developers more focused on cutting costs than project quality. With homeowners, the firm is often dealing with consumers unfamiliar with the design and construction process.

But the criteria to be considered is not limited to clients and projects. Firms have their own in-house issues to contend with when deciding to pursue a project or client. Workload can be

the biggest one of all: Will staff be available to complete the project within the required time frame? If a project requires major shifting of the firm's staff or extensive overtime to meet the project deadline, it can put the firm in a precarious situation.

The technical capabilities required for the project can also derail plans. If the firm's capabilities are limited, teaming with another firm can bolster their technical expertise. It can be dangerous if the firm's technical capabilities are inadequate or if the firm is going after a project in an area where it has no experience.

A low-bid selection process will not offer the benefits of a qualifications-based system. Do not be fooled into thinking providing a low-bid will lead to more work when the client realizes how good it is to work with your firm. Unless a firm is set up to do low cost work, it will never be successful being the low bidder.

When it comes to concerns about project funding and costs, a defined set of parameters can prevent a firm from making a financial misstep.

When project financing is in doubt, having an established threshold—such as the firm will proceed with caution when there is less than 60 percent chance of the project being fully funded—can be helpful in the decision making process.

Additionally, the competition for the project should be researched, including the firm's hit rate when going up against those firms. A low hit rate should make a firm realize its time would be better spent on other prospects. If the odds of being short-listed are high, it could be a good project to pursue. However, if the costs to go after the project are high compared with the anticipated profits, a firm should think twice before spending its marketing dollars.

Ultimately, by developing objective criteria for client and project selection—and following them—a firm will more effectively manage its risks and increase its chances of being professionally and financially successful. ■



Glen R. Mangold



Charles W. Kopplin

Glen R. Mangold, CPCU, has held leadership roles with the longest running architect/engineer insurance programs, has participated on panels and led numerous risk management presentations to A/E firms. He has more than 30 years' experience in the insurance industry. He can be reached at glen.r.mangold@gmail.com. **Charles W. Kopplin, P.E., FACEC**, has more than 40 years' experience as a consulting engineer, including 14 years as the risk manager for an ENR Top 500 Design Firm. He can be reached at cw.kopplin@gmail.com.

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Important Trends to Note in the Current M&A Market

BY MICK MORRISSEY

Typically, we reserve this page to highlight a specific feature of industry M&A. In the last edition we focused on how private equity is playing a more prominent role in recapitalizing the AEC industry. In prior issues we've looked at a variety of topics including M&A activity in specific regions of the U.S., overseas engineering firms making acquisitions into North America and best practices related to integration once a deal is done.

In this issue, we're going to change things up just a bit. We're going to focus on the mergers and acquisitions reported in our regular ACEC Deal-Makers section. These 16 deals provide an excellent and timely snapshot of three M&A themes now playing out in the consulting engineering industry as follows:

THE NEXT WAVE OF PUBLICLY TRADED BUYERS

While many you may be familiar with large publicly traded engineering firms such as AECOM and Stantec, you may not be aware of the (relatively) new kid on the block—**NV5** (Hollywood, Fla.).

With industry veteran (and civil engineer) Dickerson Wright at the helm, the firm has been growing quickly and is currently ranked No. 54 on the *ENR Top 500*. NV5 announced four acquisitions in April and May. They have a management team that is experienced and skilled in making and successfully integrating acquisitions.

They are the vanguard of the next wave of publicly traded buyers in the industry. It's also worth noting that publicly traded **Stantec** also has an acquisition in this edition's Deal-Makers.

RECAPITALIZATION BY PRIVATE EQUITY

After a deep dive on private equity in the last edition, there are two great examples of how private equity is providing consulting engineering firms of all sizes and types with a viable capitalization option.

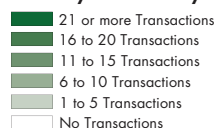
Industry leader **TRC's** announcement in April that New Mountain Capital was taken private turned heads and got a lot of attention in the industry. **Kain Capital's** purchase of a majority position in Tampa, Florida's 130-person

King Engineering Associates, Inc., was also illustrative of private equity's emergence.

2017 REPORTED M&A ACTIVITY

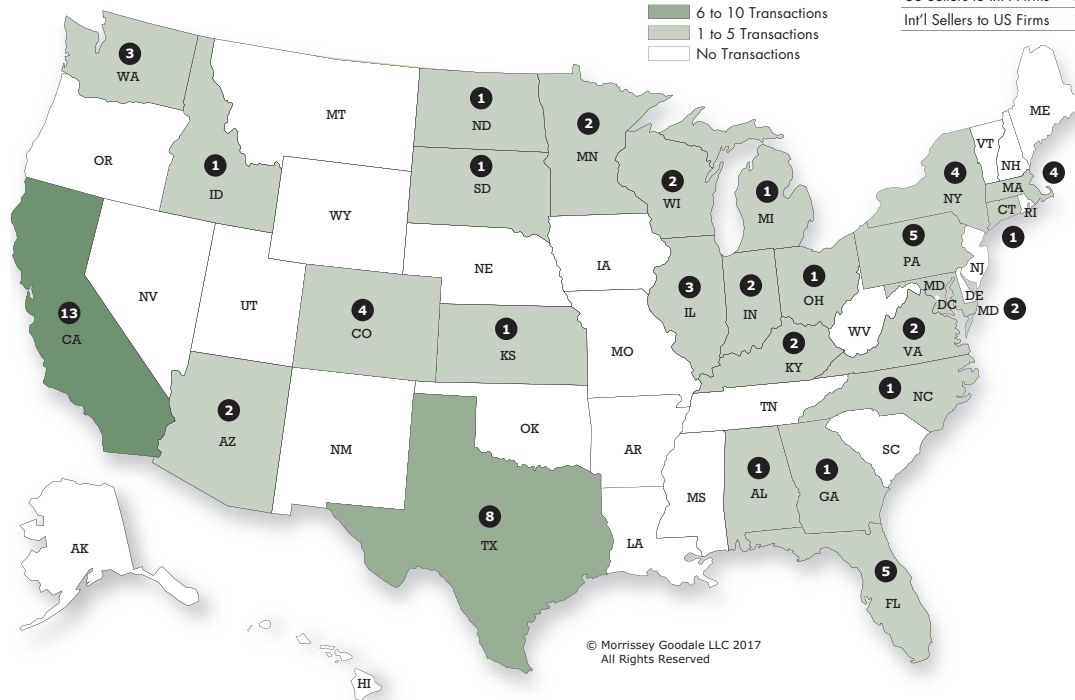
Firm Sales by State through June 1, 2017

States by Total Activity:



US vs Int'l Sellers:

Total US Sellers	77
Total Int'l Sellers	40
US Sellers to Int'l Firms	8
Int'l Sellers to US Firms	1



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DIVERSITY AND SCOPE OF INDUSTRY CONSOLIDATION

The following 16 transactions exemplify the broadness of the consolidation that's sweeping the industry. You see some of the very largest firms and a multitude of smaller firms involved—and not necessarily in their traditional or conventional roles as buyers and sellers.

Deals are being struck throughout the nation including the West Coast, Pacific Northwest, Southeast, Mid-Atlantic and Midwest. And

almost every service line is involved—from core civil engineering to surveying, architecture, environmental and water engineering to electrical engineering.

RECENT ACEC DEAL-MAKERS

MAY 2017

ACEC member **DLR Group** (Minneapolis) acquired **Kwan Henmi Architecture & Planning** (San Francisco), a firm recognized for its modernist design in a variety of building types. The firm will operate as DLR Group | Kwan Henmi and join with DLR to serve public and private sector clients throughout California.

ACEC member **NV5** (Hollywood, Fla.) announced the acquisition of three firms—**Holdrege & Kull** (Nevada City, Calif.), a full-service geotechnical engineering firm; **Lochrane Engineering, Inc.** (Orlando, Fla.), a civil engineering firm; and **Energenz** (Irvine, Calif.), an international energy services company. Both Holdrege & Kull and Lochrane Engineering are ACEC members.

Global design firm and ACEC member **Stantec** (Edmonton, Canada) acquired **Inventrix** (Seattle), a 22-person mechanical engineering firm built to deliver modern, intelligent buildings that leverage the latest advancements in systems technology.

Environmental Science Associates (ESA) (San Francisco) announced that **Scheda Ecological Associates** (Tampa, Fla.), an environmental permitting and ecosystem management consulting firm, has joined ESA. The merger supports ESA's strategy to deepen technical expertise and meet growing client demand for environmental services throughout Florida and the Southeast. Both firms are ACEC members.

Kain Capital (New York) acquired a majority stake in ACEC member **King Engineering Associates, Inc.** (Tampa, Fla.), a full-service civil engineering firm with expertise in land development, water and wastewater, planning, transportation, ecological, surveying, landscape architecture and construction management. This marks a major milestone for the private equity fund and strengthens its position within the engineering market.

ACEC member **Kimley-Horn** (Raleigh, N.C.) acquired **Oasis Design Group** (Baltimore), a landscape architecture, master planning and urban design firm. The firm's diverse portfolio of work includes public gardens and parks, urban riverfronts, streetscapes, plazas, mixed-use developments, wineries, ecological preserves and multifamily residential communities. The group will now operate under the Kimley-Horn name.

APRIL 2017

ACEC member **LaBella Associates** (Rochester, N.Y.) acquired **Novus Engineering** (Delmar, N.Y.) and its subsidiary Bagdon Environmental. The acquisition will give LaBella Associates 16 office locations, including eight in New York, and 15 new employees.

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



ACEC member **NV5** (Hollywood, Fla.) acquired **Bock & Clark Corp.** (Akron, Ohio), which is a surveying, commercial zoning and environmental services firm. Bock & Clark has eight offices in the U.S. and annual revenues of approximately \$39 million.

ACEC member **The Etica Group** (Indianapolis) acquired **PCS Engineers** (Avon, Ind.), a civil engineering firm. Etica specializes in architecture, engineering design, construction inspection and building envelope consulting devices.

ACEC member **T-O Engineers** (Meridan, Idaho), a full-service planning and engineering firm, acquired **Pharmer Engineering** (Boise, Idaho), a firm that specializes in water and wastewater treatment systems. The acquisition will grow the T-O Engineers staff to more than 80 employees.

Architecture firm **spg3** (Philadelphia) joined ACEC member **Bergmann Associates** (Rochester, N.Y.), an architecture, engineering and planning firm. The joint firm will provide retail, hospitality, entertainment, civil and expanded commercial services both regionally and nationally.

ACEC member **TRC Cos., Inc.** (Lowell, Mass.) announced that it had entered a definitive agreement with **New Mountain Capital** (New York) to become a private company. The following week, the firm announced that it had acquired public works and infrastructure engineering firm (as well as ACEC member) **CALTROP Corp.** (Riverside, Calif.) in an all-cash transaction.

ACEC member **Interstate Engineering** (Jamestown, N.D.) acquired **Ackerman Land Surveying** (Wahpeton, N.D.). The acquisition bolsters the firm's ability to serve clients in North Dakota, South Dakota and Minnesota. ■

Mick Morrissey is managing principal of Morrissey Goodale, LLC, a strategy, M&A and human capital solutions firm serving the architecture, engineering and construction industry. He can be reached at: mmorrissey@morrisseygoodale.com.



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On the Move

Wilkes-Barre, Pennsylvania-based **Borton-Lawson** announced that **Frank Joanlanne**, current president of Borton-Lawson and Precise Visual Technologies, will become CEO of both sister companies in July 2018 upon the retirement of CEO and founder **Christopher L. Borton**. Joanlanne joined the board in 2009 and assumed the role of president in 2012.

Matthew L. Jensen was promoted to executive vice president of Minneapolis-based **Dunham Associates, Inc.** Jensen, who joined the firm in 2006, was named a partner in 2011.

Los Angeles-based **AECOM** has named **Vern Kuehn** as executive vice president and general manager of a newly created federal business unit within its Construction Services business group. Kuehn most recently led the federal construction business of Kiewit Corp. He will be based in Arlington, Virginia. **Navin Sagar** has been named vice president and national director, transit systems. Sagar is based in the firm's Houston office.

Iselin, New Jersey-based **Mott MacDonald** appointed **Joe O'Carroll** as senior vice president and regional tunnels practice leader where he will be responsible for the firm's strategic growth for this sector in Southern California and the western U.S. He will be based in the firm's San Diego office.

Pasadena, California-based **Parsons** announced the following appointments: **Ruth McMorro** was named president of Parsons Enterprises, the corporation's entity focused on the development of concession-based businesses built on Parsons' credentials in infrastructure capital-asset delivery. McMorro, who will also be responsible for mergers and acquisitions, is based in New York City. **Dean Radeloff** has joined the firm as senior vice president and Texas infrastructure leader. He is based in Parsons' Richardson, Texas office.

Daniel Wojnowski has joined New York City-based **Thornton Tomasetti** as a senior vice president. Wojnowski will provide additional senior-level support to the firm's forensics practice and be based in their Chicago office.

Pittsburgh-based **Michael Baker International** announced the following appointments: **H. Daniel Cessna** has joined the firm as senior vice president and Pennsylvania headquarters regional director. He will oversee operations in the Allentown, Fort Washington, Harrisburg, Middletown, Moon Township and Philadelphia offices. Cessna formerly served as the Pennsylvania Department of Transportation's district executive for District 11 and is based in the firm's Moon Township, Pennsylvania office. **Jeff Clevenger** has been promoted to senior vice president and national practice lead, design-build. He most recently served as design-build client manager for Michael Baker's West and Mountain regions. He is based in the firm's Denver office. **Michael J. Conaboy** was promoted to senior vice president and national water practice lead. Conaboy is based in Hamilton, New Jersey. **Ted Coffey** has joined the firm as vice president and deputy national market lead in the railroad and transit practice. Coffey is based in the firm's Chicago office. **Dwain Hathaway** has been promoted to vice president and



Frank Joanlanne



Christopher L. Borton



Matthew L. Jensen



Vern Kuehn



Joe O'Carroll



Ruth McMorro



Dean Radeloff



Daniel Wojnowski



H. Daniel Cessna



Jeff Clevenger



Michael J. Conaboy



Ted Coffey

office executive to oversee operations in the firm's North Carolina offices. He is based in the Cary, N.C. office.

Tom Jackmin has been promoted to senior vice president and New England regional manager of Watertown, Massachusetts based-**VHB**. Jackmin previously served as Massachusetts operations manager and the New England regional transportation market lead. He is based in the headquarters' office.

Megan Van Pelt has joined New York City-based **WSP USA** as a senior vice president and director of human resources. She will be based in the firm's Chicago office. **Dennis Martin** has been named a vice president in the Lawrenceville, New Jersey, office and serves as director of multimodal planning for the firm's Northeast region. He has joined the firm after a 33-year career with NJ TRANSIT. **Joe Vogel** has joined the firm as a vice president and will be based in the Cincinnati, Ohio office.

Westfield, Massachusetts-based **Tighe & Bond** announced the promotion of two managers to vice president: **Ian Catlow** and **Daniel Rukakoski**. Catlow has

nearly 20 years of water and wastewater design experience working on projects throughout New England and is based in the firm's Worcester, Massachusetts, office. Rukakoski has more than 20 years of environmental consulting experience that includes environmental and energy permitting, wetlands ecology, environmental monitoring and regulatory compliance, and is based in the headquarters' office.

Julie Hellmann has been named vice president and regional manager of Charlotte, North Carolina-based **WK Dickson & Co.** Hellmann will oversee the firm's Wilmington, North Carolina office and direct the firm's infrastructure consulting services throughout the Carolinas. She previously served as a vice president and business development manager for water resources at HDR.

Matthew Ruble has joined Saint Paul, Minnesota-based **American Engineering Testing, Inc.**, as a vice president and principal engineer. He will be responsible for geotechnical and pavement engineering, construction services, project management and consulting. Ruble is based in the headquarters' office.

Girish Roy has joined New York City-based **STV** as a vice president in the firm's Transportation & Infrastructure Division where he will oversee the Los Angeles Basin, San Francisco, San Jose and Seattle markets. He is based in the Rancho Cucamonga, California office.

Thomas Harley has joined Morristown, New Jersey-based **Louis Berger** as vice president and New England regional transportation manager. Harley formerly served as chief engineer at the Connecticut Department of Transportation. He is based in the Rocky Hill, Connecticut office.

Frank O'Dea has joined **HNTB Corp.** as a vice president and group director-engineering. O'Dea was with the Florida Department of Transportation (FDOT) for 30 years, most recently as director of transportation development for FDOT District 5. He will be based in the firm's Lake Mary, Florida office.

Jason Atkinson was appointed vice president of San Antonio-based **Pape-Dawson Engineers, Inc.** He formerly served as practice leader of civil engineering and surveying. He is based in the firm's Houston office.



Dwain Hathaway



Tom Jackmin



Megan Van Pelt



Dennis Martin



Joe Vogel



Ian Catlow



Daniel Rukakoski



Julie Hellmann



Matthew Ruble



Girish Roy



Thomas Harley



Frank O'Dea

Welcome New Member Firms

ACEC/California

FALCON Engineering Services, Inc.

Corona

Groza Construction

Monterey

Keith Higgins, Traffic Engineer

Gilroy

RockSol Consulting Group, Inc.

Red Bluff

ACEC/Florida

A-C-T Environmental & Infrastructure, Inc.

Bartow

American Infrastructure Development, Inc.

Tampa

Applied Foundation Testing, Inc.

Green Cove Springs

Cumbey & Fair, Inc.

Clearwater

D&B Engineers and Architects

Coral Gables

Hatcher Engineering, Inc.

Plant City

Pevida Highway Designers, PLLC

Doral

Pyramid Engineering, Inc.

Clearwater

ACEC/Georgia

Tharpe Engineering Group

Savannah

ACEC/Idaho

Trindera Engineering

Coeur d'Alene

ACEC/Illinois

Quality Testing and Engineering, Inc.

O'Fallon

ACEC/Louisiana

NOLA Engineering, LLC

Slidell

W.F. Baird & Associates, Ltd.

Baton Rouge

ACEC/Maryland

AB Consultants, Inc.

Baltimore

Rothfuss Engineering Co.

Jessup

Wetland Studies and Solutions, Inc.

Millersville

ACEC/Mississippi

H1 Services, LLC

Madison

ACEC/Tennessee

Civil Infrastructure Associates, LLC

Murfreesboro

Environmental Consulting & Technology, Inc.

Knoxville

L. I. Smith & Associates, Inc.

Paris

Stone + Howorth, PLC

Nashville

ACEC/Texas

Jones Engineers, LP

Houston

Nabr Network (AsOne Networks, LLC d/b/a Nabr Networks)

Lewisville

ACEC/Washington

Fast + Epp USA, Inc.

Seattle

JULY

- 12** Negotiating Engineering Contracts for Better Results (online class)
- 25** Communicating for Decisions: Why 20 Percent of Your Company May Understand You (online class)
- 26** Strategies to Fight Broad Form Indemnification and 'Duty to Defend' (online class)

AUGUST

- 1** Introduction to Envision and Sustainable Infrastructure (online class)
- 2** Before Signing the Design Services Contract (online class)
- 3-4** 2017 CASE Risk Management Seminar: Time-Tested Techniques for Managing Your Firm's Risk, Chicago
- 8** Take Control of Your E-mail: Outlook and E-mail Management Best Practices (online class)
- 15** The Role of Research in Enhancing the Client Experience (online class)
- 16** Six Rewarding Steps for Killer Project Profits (online class)
- 29** What I Really Meant to Say...Mastering the Art of Communication (online class)

SEPTEMBER

- 6** The Four Drivers to Sales Performance You Need to Know...and Grow (online class)
- 11-12** Finance Forum-2017, Austin, Texas
- 11-12** Human Resources Forum-2017, Austin, Texas
- 11-12** Information Technology Forum-2017, Austin, Texas
- 14** The Do's and Don'ts of Landing Your Next Strategic Hire (online class)
- 26** How to 'Engineer' Business Relationships: Using Your Natural Strengths to Attract Opportunities (online class)

OCTOBER

- 11** Leading Organizational Change to Improve Profitability (online class)
- 12** Motivate and Manage: Brain-Friendly Techniques to Enhance Performance in Unsettling Times (online class)
- 15-18** ACEC's Fall Conference, Orlando, Florida

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Developed by the Council of American Structural Engineers, this program will focus on helping firms reduce their rate of claims against structural engineering projects while raising the level of quality services provided by all project participants. Visit <http://www.acec.org/calendar/> to review the full program and register.



NEW PUBLICATION FOR 2017: CAN I BORROW YOUR WATCH?

ACEC's new publication, "Can I Borrow Your Watch?" A Beginner's Guide to Succeeding in a Professional Consulting Organization, focuses on the unique needs of engineering firms, and the skills and experiences required for professional consultants to be successful in a large organization.

The guide covers a wide range of topics, including project management, client relationships, proposals and reports, and financial management. It is available in print and digital formats, visit <http://bit.do/acec-watch>.



ACEC HR, IT AND FINANCE FORUMS TO MEET SEPT. 11–12, 2017, AUSTIN, TEXAS

Offering two days of peer-to-peer information sharing, problem solving and networking, ACEC forum workshops help members make sense of current concerns and emerging trends impacting the A/E workplace today.

HR, IT and Finance firm leaders and directors will discuss common problems, benchmark processes, share experiences and network in an informal roundtable format, all of which continues post-forum via active online communities.

The next in-person forum meetings will be held Sept. 11–12, 2017 at the Hilton Austin. For more information on each meeting and to register, visit

- HR Forum: <http://bit.do/acec-hr-forum>
- IT Forum: <http://bit.do/acec-it-forum>
- Finance Forum: <http://bit.do/finance-forum>

REGISTERED CONTINUING EDUCATION PROGRAM

For engineers, surveyors and design professionals, the Registered Continuing Education Program (RCEP) provides a one-stop online shop for all educational activities. These include easily accessible continuing education record keeping, uniform and reliable transcripts for state licensing boards, up-to-date continuing education and licensure requirements by jurisdiction and a master calendar of more than 149 Registered Education Providers.

More than 87,000 design professionals use RCEP online to manage their continuing education. Originally developed in 2008 by NCEES and the American Council of Engineering Companies (ACEC), RCEP is now administered by ACEC with the support of the American Society of Civil Engineers.

As a special feature, state licensing board authorities can audit RCEP subscribers directly from the RCEP system. The board member simply logs in to the RCEP system, selects the licensee's A/E/C discipline and enters the individual's license number. A listing of education activities over a specified calendar period will be displayed.

RCEP is a powerful resource for firms to manage and track their staff's continuing education programs. Firms can create customized reports to track continuing education credits earned toward renewing licenses, identify specific courses and seminars for staff improvement, and use RCEP to recognize and award merit increases to employees for their continuing education achievements. Unique to RCEP is the provider network and Master Calendar.

To be a Registered Education Provider on RCEP, organizations must adhere to high professional educational program standards. RCEP-approved Registered Education Providers can also advertise their educational activities on the RCEP Master Calendar, upload their course participants' records and reach out to previous attendees for new and upcoming educational offerings.

Visit www.rcep.net or contact La'Creshea Makonnen at 202-682-4338 for more information. ■



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