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SEPTEMBER/OCTOBER 2009

ENGINEERING INC.

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THE AWARD-WINNING BUSINESS MAGAZINE

Renewable Energy Opportunities

Member Firms Respond to Light Rail Demand

Wisconsin, Texas First to Require BIM On Public Projects

Senator JEFF BINGAMAN
Champion for Clean Energy and Job Growth

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Don't Miss the Fall Conference in Palm Springs Oct. 7-10
Engineering America's Recovery (see page 24)

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ACEC
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100 Years of Excellence

Engineering Inc. promotes the advocacy and business interests of ACEC by offering news, legislative analysis and business practice information to member firms, clients, opinion leaders and policy makers.

New Era in Energy Efficiency Takes Hold

In our cover feature, Sen. Jeff Bingaman (D-N.M.), chairman of the Energy and Natural Resources Committee, with whom we recently visited, discusses the growing importance of renewable energy and energy efficiency in the U.S. economy.

"Americans have shown a keen willingness to see our nation move toward cleaner and more efficient forms of energy," says the senator, adding that "The potential for efficiency improvements in the building sector is extensive."

ACEC has long advocated an expanded federal incentives program to boost energy efficiency in both infrastructure and building projects, and we support Energy Efficiency and Conservation Block Grants to finance county and city investments in public building projects that use energy-efficient technologies.

Renewable energy is the focus of this issue of *Engineering Inc.* One feature highlights the business strategies of several ACEC Member Firms, including Seattle-based R.W. Beck, which is attempting to strike a balance between committing to the rapidly growing renewable energy field and not getting too far ahead of the market.

If your firm is active in energy projects, we urge you to join ACEC's Environment and Energy Committee. For more information, contact staff director Diane Shea at dshea@acec.org.

We look forward to seeing you at the ACEC Fall Conference, Oct. 7–10 in beautiful Palm Springs. Titled "Engineering America's Recovery," the Conference offers an extraordinary business program with top-flight speakers and social events. To register, go to www.acec.org.

Timothy Psomas
ACEC Chairman

David A. Raymond
ACEC President & CEO

ENGINEERING INC.

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Wisconsin, Texas First States to Require BIM on Public Projects

Wisconsin and Texas are the first states to require the use of Building Information Modeling (BIM) on state-funded public projects.

Wisconsin established its new procurement policy effective July 1, 2009. It requires BIM and 3D software to be used from initial planning concepts to bidding documents and project closeout for A/E services in a design-bid-build project delivery format.

The mandate affects all projects with a total budget of at least $5 million and all new construction with a minimum budget of $2.5 million.

The Texas Facilities Commission announced in early August that it is also requiring a BIM model for all state design and construction projects. The agency oversees all real estate development for the state, including state buildings and all state university systems.

The Texas Facilities Design and Construction division has also developed a set of standards and guidelines that all private sector partners will have access to prior to any involvement in a state project.

In Wisconsin, five projects with budgets in excess of $5 million are up for A/E selection in the next several months, followed by another 18 expected between now and 2011.

The initiatives include new and existing construction for 16 state agencies, including the Department of Military Affairs, Department of Administration, Department of Corrections and the University of Wisconsin system.

"From the standpoint of most engineering companies BIM is still at the beginning of its development. Having the Wisconsin Division of State Facilities implement standards shows that the state recognizes the potential and wants to help move the A/E/C community in a direction it feels will be beneficial to state building owners as well as the taxpayers of Wisconsin," said ACEC/Wisconsin President Stan Sugden of Ruekert/Mielke in Waukesha.

ACEC/Wisconsin President Stan Sugden

"Our Member Firms believe, by mandating this technology, there will be better coordination of contract documents to ultimately produce a better product for the state and reduce the number of conflicts and change orders."

Interest in High-Speed Rail Is Red-Hot, Federal Railroad Administration Learns

The Federal Railroad Administration (FRA) has received 278 grant applications for high-speed rail projects throughout the nation, totaling $102 billion.

The grant applications far outpace the initial $8 billion in funding for high-speed rail projects included in the American Recovery and Reinvestment Act (ARRA), as part of the High-Speed Intercity Passenger Rail competitive grant program.

Applications for grants and total value by region break down as follows: Northeast—79 applications ($35 billion); Southeast—44 applications ($16 billion); Midwest—47 applications ($13 billion); and West—108 applications ($38 billion).

Forty states and the District of Columbia filed pre-applications. Though not all proposed projects will be funded, the FRA has indicated it will work with states and regions to identify high-speed passenger rail development priorities.

President Obama has proposed a continuing $1 billion annual investment to further the High-Speed Intercity Passenger Rail competitive grant program. The U.S. House Appropriations Committee in July included $4 billion for high-speed rail in its fiscal year 2010 transportation spending bill—quadrupling the president's proposal.

The U.S. Department of Transportation is expected to announce the first round of merit-based grants in the fall.

UPI PHOTO/KEVIN DIETSCH

Surge in Renewable Energy Market Creates Plethora of Options, Opportunities

By Joe Salimando

Renewable energy markets—from sun to wind to geothermal and biomass—are experiencing a boom, as businesses look for environmentally friendly, socially acceptable, cost-effective methods to power their operations.

Global warming looms large, as do the difficulties in building coal-fueled power plants (a significant number of these projects have already been canceled or put on hold); with a 10- to 15-year build cycle, nuclear power plants have fared no better.

The word of the moment in modern engineering circles is "green." Consumers want to buy it. Clients want to be it. And engineers are expected to be able to design it.

Just how widespread is the trend? One analysis of government energy data by the nonprofit Sun Day Campaign found that renewable energy production in the United States spiked by 7.4 percent in 2008, with that number expected to increase in the near term.

Across the nation, a spate of local, state and federal government mandates is driving demand for alternative energy production. New York Gov. David A. Paterson, for example, proclaimed recently that his state conceivably could generate some 45 percent of its electricity from renewable sources by 2015. A recent international scientific congress on climate change suggested the world could generate 40 percent of its power from renewable energy sources by 2050. Opportunities for engineering firms abound.

Solar

Practically speaking, the sun is the generator that powers the Earth. Television scientist Bill Nye ("the Science Guy") suggests more than 400 trillion watts of solar power reach the Earth's surface every second! Think about that. Now, ask yourself this: How can we, as a 21st-century society, harness that power? A few ideas:

Photovoltaics (PV): DC power is created in solar modules. PV is scalable, from individual buildings to utility-size fields full of modules. All that's left to do is collect the energy created by the sun and use it.

Concentrating Solar Power: This energy is used in utility-scale power plants, with mirrors concentrating the sun's heat on a central water source. The concentration creates steam, which can be used, for example, to turn a turbine.

Solar Thermal: In the United States, this technology is used mostly to heat water in individual buildings; solar thermal technologies are even bigger in Europe.

Building-Integrated Photovoltaics (BIPV): BIPV includes installing solar modules on rooftops and installations on sides of buildings.

Photovoltaics present the biggest opportunity. Speaking at Intersolar North America in July, analyst Shyam Mehta of GTM Research predicted that the U.S. market for solar panels would hit 2.13 gigawatts (GW) by 2012, a nearly six-fold increase from 342 megawatts (MW) in 2008.

Beyond utility-scale projects and rooftop installations, work in this area for engineering firms also might include design of PV *manufacturing* plants. "The industry's view is that the United States will be a leading market for supply and demand," wrote Mehta on the industry website, SeekingAlpha.com.

Wind

BTM Consult out of Denmark said in a report posted on RenewableEnergyWorld.com that "more than 200GW of wind power capacity could come on line before the end of 2013." Denmark is currently the world leader in wind energy.

According to BTM, 28.2MW of new wind capacity was added worldwide in 2008, with the global total reaching 122GW at last year's end.

In the United States, Emerging Energy Research (EER), a consultancy that tracks the progress of renewable energy in global markets, suggests the potential for 9GW in new 2010 installations and 11GW of additions in 2011. "By 2020, the United States could see wind-power growth of 15.5GW," according to EER analysts.

Contributing to anticipated U.S. growth is a 30 percent investment tax credit "combined with U.S. Treasury grant options."

Other Renewable Energy Sources

Geothermal: Statistics show that geothermal energy comprises 6 percent of all energy produced in California, 10 percent of energy produced in Nevada, and 25 percent of energy produced in Hawaii. A recent study by New York University's Stern School of Business observes that geothermal energy is "less expensive than wind, solar power, or biomass," but suffers from being "very geographically constrained."

Biomass: A 2007 report from the 25x'25 Alliance—which promotes biomass production as essential to its goal of deriving 25 percent of U.S. power needs from renewable energy sources by 2025—was reinforced by a recent University of Tennessee study, which stated that "feedstocks produced by fields, farms and forests could produce 86 billion gallons of ethanol and 1.2 billion gallons of biodiesel," reducing gasoline consumption in this country by some 59 billion gallons annually by 2025.

Possibilities and Priorities

With the federal government contributing extended tax credits, stimulus money for some current renewable energy support and increased funding for research and development in these areas, it's safe to say alternative energy production is enjoying its time in the sun. How long that will last depends on the viability and staying power of these emerging energy markets. Regardless, there exist tremendous opportunities for firms prepared to balance the risks inherent in investing in these latest methods with the potential rewards.

Joe Salimando writes on the construction industry at www.electricalcontractor.com. He can be reached at ecdotcom@gmail.com.

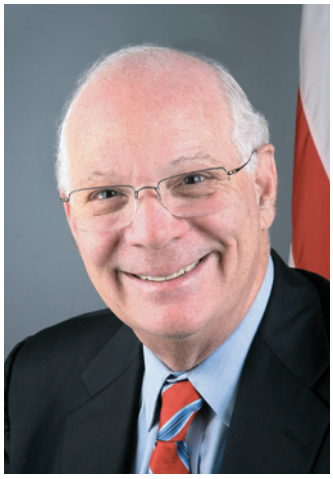
LEGISLATIVE ACTION FROM ACEC'S GOVERNMENT AFFAIRS DEPARTMENT

HEALTH CARE REFORM DELAYED; PRESIDENT SIGNS $7B SHORT-TERM FIX FOR HIGHWAY TRUST FUND

Senate Poised to Act On ACEC-Backed Water Infrastructure Bill

The U.S. Senate will take up a $38.5 billion water and wastewater infrastructure bill when Congress returns in September, setting the stage for conference negotiations with the House in the fall.

Sponsored by Sen. Barbara Boxer (D-Calif.) and cosponsored by Sens. Jim Inhofe (R-Okla.), Benjamin Cardin (D-Md.) and Mike Crapo (R-Idaho), S. 1005 authorizes $20 billion for the Clean Water State Revolving Fund and $14.7 billion for the Drinking Water SRF over five years.



Sen. Benjamin Cardin (D-Md.), water infrastructure bill cosponsor

Sen. Mike Crapo (R-Idaho), water infrastructure bill cosponsor

The bill also expands eligible activities for SRF funding and extends loan repayment schedules to 30 years. Low-income communities, or portions of large municipalities with "pockets" of low-income households, are eligible for negative-interest loans and principal forgiveness. The measure also sets aside $1.85 billion for grants to address combined sewer overflows.

Additionally, the bill requires that SRF-funded projects use Qualifications-Based Selection (QBS) in the procurement of engineering services, although communities with populations of less than 10,000 are not required to comply. The House passed a similar water bill earlier in the year and included QBS language that would apply to all projects.

ACEC will work with House and Senate negotiators to support the House language in the final package.

President Signs $7B Short-Term Fix for Highway Trust Fund

Responding to pressure from ACEC, other industry groups and state departments of transportation, Congress passed and President Obama signed legislation to transfer $7 billion from the General Fund into the Highway Trust Fund to shore up the depleted balance. The funds were necessary to avoid a projected shortfall and enable timely project payments to states through the current fiscal year, which ends Sept. 30.

The administration had requested funds to carry the trust fund through an 18-month extension of the current law. But through the short-term $7 billion transfer, Congress is keeping open the option of acting on a multiyear bill rather than delaying consideration until 2011.

Lawmakers will return to Washington in September and further consider legislation to replace the current six-year transportation authorization, which expires at the end of the month.

In related news, in separate letters to the White House and to the editors of *The Washington Post*, ACEC President and CEO Dave Raymond called on President Barack Obama to reconsider his proposed 18-month delay of a new six-year surface transportation program.

With the economy still lagging and unemployment numbers rising, Raymond emphasized that early passage of the transportation bill is an essential component of the nation's economic recovery effort.

"While ARRA is moving many short-term, 'shovel-ready' projects forward, failure to pass a longer-term transportation bill will prevent state and local governments from investing in major infrastructure upgrades that will generate sustainable new jobs and economic activity," wrote Raymond.

ISSUES ON THE MOVE	WHAT'S NEXT
Senate water bill	Senate floor action in September
Short-term transportation funding fix	Action on a SAFETEA-LU extension bill, and a new transportation program in September
Senate Committee-passed FAA bill	Floor consideration in the fall
Health care reform	House, Senate floor action expected in the fall

Senate Committee Clears FAA Reauthorization Bill

The Senate Committee on Commerce, Science and Transportation approved legislation in July to reauthorize FAA operations and funding for an additional two years.

The Federal Aviation Administration Air Transportation Modernization and Safety Improvement Act (S. 1451) substantially increases funding for airport construction and expansion, providing $4 billion for the Airport Improvement Program (AIP) per year, an increase of $500 million annually above current levels.

ACEC is seeking to add two key provisions from companion legislation that already has cleared the House—to increase the allowable cap on Passenger Facility Charges (PFCs) collected for airport facility improvements, and to require the use of QBS on local airport projects funded through PFCs. Current law requires QBS only on projects funded through the AIP program.

A vote in the Senate is expected later this year.

UPI PHOTO/KEVIN DIETSCH

Rep. Earl Blumenauer (D-Ore.) pushes ahead for water trust fund

Blumenauer Introduces New Water Trust Fund Bill In the House

Rep. Earl Blumenauer (D-Ore.) introduced legislation (H.R. 3202) that would create a new trust fund, supported by dedicated revenue streams, to support an expanded federal water infrastructure effort.

ACEC is working closely with the American Public Works Association and a coalition of public agencies, contractors and other stakeholders to build support for the trust fund concept.

The Water Protection and Reinvestment Act would raise approximately $10 billion annually through new levies on certain soft drinks, pharmaceuticals and other consumer products, as well as a 0.15 percent corporate tax on profits over $4 million. The new funds would flow to the states through the existing Clean Water Act and Safe Drinking Water Act State Revolving Fund programs.

A significant portion of the funding for wastewater projects would be set aside for negative-interest loans and principal-forgiveness loans. In addition, six new grant programs would be created to fund water and wastewater system security, climate change mitigation and adaptation assistance, workforce development, sewer overflows, research development and technology demonstration programs, and a drug take-back program.

A subcommittee of the House Transportation and Infrastructure Committee held a hearing on the legislation in July, but it is uncertain that the bill will see further consideration this year.

Senate Majority Leader Harry Reid seeks bipartisan compromise

KAREN BLEIER/AFP/GETTY IMAGES

Health Care Reform Put Off to the Fall

Separate efforts in the House and Senate to move major health care reform initiatives fell short before Congress adjourned in August, pushing the debate into the fall.

House and Senate leaders are attempting to balance competing approaches of liberal Democrats, who seek a greater federal role in health care, and moderates, who are concerned about the high costs and competition between a proposed government health insurance plan and private-sector insurers.

ACEC President Dave Raymond wrote to congressional leaders before the August recess to lay out a number of industry issues, and emphasized that Congress should take steps to make it easier for businesses to access affordable health insurance products through trade associations or other cooperatives to take advantage of collective purchasing power.

Much of the attention in the Senate is focused on bipartisan negotiations among a group of Finance Committee members, including Chairman Max Baucus (D-Mont.) and Ranking Member Charles Grassley (R-Iowa). While those negotiations appear to be heading toward a package that rejects the idea of a government-sponsored plan in favor of state-level cooperatives, Senate Majority Leader Harry Reid (D-Nev.) must balance the proposal that emerges with the wishes of the Senate Health, Education, Labor and Pensions (HELP) Committee, chaired by Sen. Ted Kennedy (D-Mass). Kennedy's panel continues to seek a government-sponsored plan as part of the package.

In the House Energy and Commerce Committee, Chairman Henry Waxman (D-Calif.) negotiated with a group of moderate "Blue Dog" Democrats on changes to the package, including an increase in the exemption level for small businesses from the employer mandate and delinking provider payment rates within the new government-sponsored plan from Medicare rates. House leadership must find a way to balance the concerns of the Blue Dogs with those of the party's more liberal wing.

With the House and Senate having missed the August deadline for completing work on health care reform, the White House continues to push to complete work before the end of the year.

FOR MORE NEWS

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

Senator JEFF BINGAMAN

Creating jobs through clean

Sen. Jeff Bingaman (D-N.M.) is chairman of the U.S. Senate Energy and Natural Resources Committee, which has jurisdiction over national energy policy and the public lands of the nation.

He also serves on the Senate Finance Committee; the Health, Education, Labor and Pensions Committee; and is a senior member of the Joint Economic Committee. First elected to the Senate in 1982, Bingaman was reelected to a fifth term in 2006.

In this exclusive interview with ACEC, he addresses clean energy initiatives, the impact of stimulus funding on energy policy and the critical need for engineering in developing infrastructure and new technology.

GARY LANDSMAN


energy initiatives

Sen. Jeff Bingaman (left) meets with ACEC Chairman Timothy Psomas (center) and ACEC President Dave Raymond (right) to discuss clean energy proposals in the Senator's Capitol Hill Office.

ACEC: Energy efficiency, renewable energy, and clean energy technologies have received a great deal of attention from the Senate Energy and Natural Resources Committee over the past few Congresses. From your perspective, has the nation's awareness of energy and climate issues grown enough to support comprehensive changes in the way we manage energy?

SEN. BINGAMAN: Americans have shown a keen willingness to see our nation move toward cleaner and more efficient forms of energy, and a central feature of President Obama's campaign last year called for greater renewable energy. This strong and growing interest in clean sources of energy gives Congress the ability to craft meaningful legislation, such as the bipartisan American Clean Energy Leadership Act of 2009. Americans expect Washington to enact energy policies that reduce greenhouse gas emissions, and when you have a combination of White House leadership and bipartisan Congressional engagement, chances of real progress are substantial.

ACEC: The American Recovery and Reinvestment Act (ARRA) provided new funding to the states and the Department of Energy (DOE) for investing in programs and technologies to increase energy efficiency, expand renewable generation, improve electric transmission, reduce our dependence on oil and lower greenhouse-gas emissions. In your opinion, how effective have these investments been so far in helping to accomplish those goals?

SEN. BINGAMAN: Through ARRA, the DOE received $32.7 billion to advance clean energy projects and create jobs. Examples include $11.6 billion for the Office of Energy Efficiency and Renewable Energy for such activities as state weatherization grants, development

of renewable energy technologies and advanced efficiency programs. Other areas include $4.5 billion for the development of smart-grid technologies and $6 billion for cleanup of former nuclear weapons production sites.

Additionally, Congress appropriated $6 billion to underwrite $60 billion worth of loans to develop innovative clean energy technologies. These funds are now being awarded to meritorious proposals submitted to the DOE, and we won't know the full effectiveness for about a year or longer. But it is important to emphasize that not only are we judging effectiveness by the ability to create new clean energy technologies, but also by putting displaced Americans back to work, and while making our nation more competitive in the emerging global marketplace for clean energy. Other countries such as Japan and Germany already are making great strides in this area with carefully laid out roadmaps on specific areas they want their national industries to compete in. I think it is imperative that we view this funding not just as a job-creator technology incubator, but also as leverage to compete in global clean-technology energy markets, which soon will dominate the world's economy.

ACEC: What do you see as the most realistically attainable U.S. energy-efficiency goals in the foreseeable future?

SEN. BINGAMAN: Energy efficiency has long been the low-hanging fruit of our energy challenges. One way to become more energy efficient is to deal with energy-efficiency standards for appliances. We need to look for ways to enhance the existing appliance standards program and should consider whether alternative regulatory approaches make sense.

ACEC: The Senate Energy and Natural Resources Committee recently reported out the American Clean Energy Leadership Act of 2009 (ACELA). What are your predictions for passage in the Senate and ultimately enactment by Congress?

It is important to emphasize that not only are we judging effectiveness by the ability to create new clean energy technologies, but also by putting displaced Americans back to work, and while making our nation more competitive in the emerging global marketplace for clean energy.

SEN. BINGAMAN: The substantive and forward-looking approaches to energy found in ACELA will move America toward the clean jobs and economic growth we need. I think because of the bipartisan approach we engaged while producing this bill, coupled with the growing desire to shift our country to cleaner sources of energy, the chances for enactment are very good.

ACEC: ACELA includes new building-code provisions affecting how residential and commercial buildings will be designed and constructed in the future. How important are building-code improvements to the overall energy conservation goals of the nation?

SEN. BINGAMAN: The potential for efficiency improvements in the building sector is extensive. Our current federal laws to promote building efficiency are too weak. We need to do more to promote the adoption of modern, energy-saving building codes across the country. We also need to do a better job of giving building owners and prospective buyers more information on the energy performance rating of their buildings. DOE has engaged a lot of builders in this country constructively through its "Build America" program. We should look for ways to strengthen this program.

ACEC: Engineering firms in New Mexico and throughout the country play a critical role in helping the federal government address the cleanup and closure of sites from the former nuclear weapons complex. What is your vision for completing this task and reducing environmental threats to areas surrounding the sites?

SEN. BINGAMAN: The Department's Environmental Management Program tackles some of the most complex engineering problems in the nation as it deals with toxic materials and radioactive waste from the production of nuclear weapons. The projected liability of this program over the next 75 years is in excess of $266 billion. Congress expects the DOE to not only clean up these former cold-war sites but also to do it safely, with the best project management and lifecycle tools available. Because these projects are so complex, they are vulnerable to large cost and schedule overruns, as we encountered with the Hanford Waste Treatment Project several years ago.

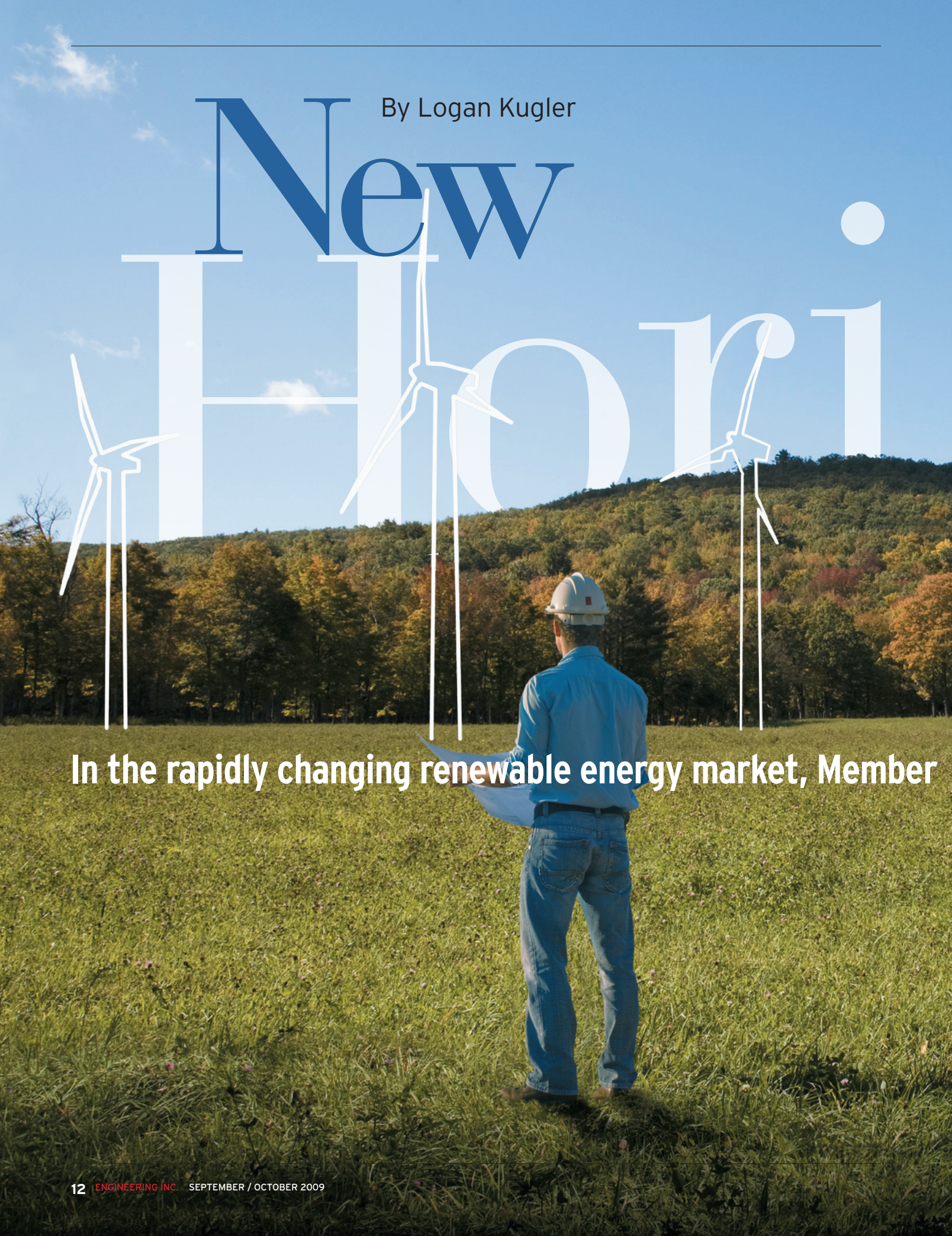
ACEC: As you work to improve our nation's energy infrastructure and technology deployment, what role do you envision for the nation's engineering industry?

SEN. BINGAMAN: The nation's engineering industry must increasingly compete in global markets. That means its ability to communicate and draw talent across the globe must be seamless, whether it is constructing a nanoscience center in Albuquerque, N.M., or teaming with partners for a large power plant project in India. Today's engineers must be able to talk overnight with other engineers in India or Japan on a project in South America. Congress needs to help provide the resources to our engineering schools to train tomorrow's engineers who will truly be global in how they think. I think we did that with the recently enacted America COMPETES Act and the increases in funding we have provided to the National Science Foundation and the Office of Science within the DOE, but I anticipate that economic and intellectual borders will increasingly become more transparent, and so must the ability of today's engineering firms to compete in this new global economy. ■

GARY LANDSMAN

By Logan Kugler

New Hori



In the rapidly changing renewable energy market, Member

Zons

Firms use innovative strategies to lead the evolution

As the nation—and even the entire world—weans itself off carbon-based energy and fossil fuels, and as demand continues to grow for new systems and infrastructure powered by cleaner, more efficient technologies, the renewable energy market could become a lucrative practice for engineering firms.

That's the good news. What's a little tougher for firms to digest is just how to succeed in a market that, as of yet, has literally no established customer base. Truth is, no one knows which of the numerous renewable energy options—wind, solar, biodegradable animal waste, electric, or some as yet undiscovered method—will emerge as the de facto energy source of the future.

> We can go recruit or build new capability and take that to current clients who trust us because they already know us.
>
> TIM CORRIGAN
> R.W. BECK

Though it's unlikely that society will ever agree on a silver bullet, investing heavily in one area—solar, for instance—that fails to achieve critical mass could represent a devastating financial blow to any firm, especially in tough economic times.

Keeping a sure footing on this rapidly shifting terrain requires more than just engineering smarts. Investing time and resources cleverly, keeping up with the latest developments and building relationships both with and among partners and clients is essential if firms are to thrive in—and build—the emerging renewable energy landscape.

Building Tomorrow, Today

To succeed in the renewable energy market requires equal parts technological expertise and business acumen.

"You can't be too far ahead of the market," says Tim Corrigan, executive vice president for energy at Seattle-based R.W. Beck. "Even though we might know exactly where the markets are going to end up five years from now, we've got to get to tomorrow and next month and next year before five years get here."

For Corrigan, this means constant evaluation and further reevaluation of the latest technologies as well as the current business climate. Lean too far forward and you might overextend (say, by investing too heavily in sectors without staying power); hang back, and you risk being shut out of "the next big thing."

Creating a business process to balance up-and-coming technologies with current market realities is essential. For R.W. Beck, this means focusing on current strengths with new clients while nurturing relationships with existing clients whose needs can be met by new technologies. "We can go recruit or build new capability and take that to current clients who trust us because they already know us," says Corrigan. "The other side of that coin is that we can take our current technology that we're good at and have a deep resume with and go to new clients with what we already do well." By balancing existing strengths with new capabilities, the idea is that firms can stay grounded while still branching out into future technologies.

Psomas President Jacob Lipa is another leader who promotes the notion of integrating future technologies into projects for existing clients. "We are always looking for how new systems can combine with our existing services," says Lipa. "When we are designing a water system, for example, we are already looking at the possibility of adding, say, a photovoltaic system. Even if it possibly doesn't make sense to do it today, we are designing it with the flexibility to be able to attach to it in the future."

Blair Loftis, national director of alternative and renewable energy at San Diego-based Kleinfelder, subscribes to a similar school of thought, but takes a slightly different approach.

With increasing resources devoted to wind power and a growing percentage in solar, Kleinfelder already has significant expertise in two renewable energy sectors poised to make significant inroads in the coming years.

Loftis continues to press development of these emerging sectors, but also has created teams to explore fringe innovations.

"They're almost like focus groups," says Loftis, describing the teams his firm assembles to vet the technological, legal, environmental and business ramifications of new technologies. "We assess the technology and then we look at how the market is responding to that technology."

Firms rely on a wealth of knowledge and understanding that often extends far beyond the realm of technical expertise. "Clustering toward a particular technology tends to be geographically based," says Guy Winebrenner, senior vice president at Georgia-based MACTEC Engineering and Consulting, Inc. R.W. Beck's Corrigan agrees. "We're not suggesting our clients go out and build wind turbines. We're suggesting our clients look at their resource options in their particular situation and assess whether wind turbines are the most efficient and economical next choice for them."

Understanding Needs

It is in the context of relationships among engineering firms, their clients and their partners that all new technologies must be assessed. "We look at two things," says Winebrenner. "First, where are our services best used? Second, what are the types of projects our clients are looking to invest in?" Of course, this is partially out of necessity—a firm without clients doesn't need to worry much about long-term energy plans—but it reveals an important truth about energy engineering: Ultimately, the development of future energy systems is tied to present-day relationships.

> We assess the technology and then we look at how the market is responding to that technology.
>
> BLAIR LOFTIS
> KLEINFELDER

> It really will take a portfolio of renewable energy resources to be able to provide an economical, environmentally sustainable and secure energy source over the next decade.
>
> GUY WINEBRENNER
> MACTEC ENGINEERING AND CONSULTING

"Part of our strategy is a very deliberate and focused understanding of our partner's needs," says Loftis. "We want to work with them to take their existing technology to the next level." One Kleinfelder partner, for instance, recently developed a biomass plant that runs on dairy farm manure. A co-op of dairy farms, banded together, can generate more than 10 megawatts or more of power—often enough to run a farm's day-to-day operations.

Engineers have since taken the basic idea behind the dairy farm technology and retrofitted it for use on North Carolina hog farms. Working on its clients' behalf, Kleinfelder reaches out to power utilities across the state, pairing utility providers with energy-producing hog farmers to create an as yet untapped market for the technology.

In the short term, Kleinfelder has no way of knowing whether it will profit from these early relationships. It is, after all, investing a lot of time and resources in a technology that has no established growth model. But, in the event the technology does take off, the firm will find itself at the leading edge of an emerging energy sector. If not, at the very least, Loftis says Kleinfelder will have established new relationships for future potential business.

The Future of Power

Though it is impossible to know what energy sources will dominate in the years to come, several technologies hold promise for the future. Here are a few:

- **Enhanced Geothermal Systems:** Between the United States and China exists 8,000 miles of hot underground rock—more than hot enough to power steam generators. Drill a pair of connected holes 6 kilometers deep, dump water down one side where it heats instantly to 750 degrees Fahrenheit, creating steam to power a turbine in the second hole, and you have a steady and virtually inexhaustible supply of energy.

- **Hydrokinetics:** The crashing of the surf might soon be harnessed, converting at least some of that wild energy into electrical power. Unlike the wind farms and solar generators of the sunny Southwestern deserts and high plains, wave-powered generators can be built in close proximity to coastal cities, where the vast bulk of the nation's population lives, thus drastically reducing energy transmission costs.
- **Wind:** Wind turbines today are popping up in the most unusual places. Offshore wind turbines are imminent, and flying wind turbines tethered 25,000 feet in the sky might well prove more practical than whimsical.
- **Biomass:** Coal and oil are not the only things that burn—nor are they the cleanest. Everything from wood chips to livestock waste can be converted into cleaner-burning, almost instantly renewable power, providing on-site energy generation for farms, sawmills, food processors, factories and other industries that produce organic wastes.

- **Nuclear:** "As unpopular as it might be, nuclear is the coal of tomorrow," says Kleinfelder's Blair Loftis. Current technologies produce less waste, dispose of waste more safely and minimize the risk of accidents.
- **Coal:** Don't count coal out—yet. "The engineering community has definitely risen to the occasion" of developing technologies to build plants that minimize pollution and carbon output while using coal more efficiently, says Guy Winebrenner of MACTEC. He adds: "Coal is going to remain an important part of our energy portfolio, at least in the near term."

Getting There From Here

For firms that want to prosper in renewable energy, the key is to build a portfolio of experience that touches on one or more emerging sectors.

"Looking toward the future, it really will take a portfolio of renewable energy resources to be able to provide an economical, environmentally sustainable and secure energy source over the next decade," says MACTEC's Winebrenner. This applies not just to emerging generator technologies, for example, but to methods of transmitting, storing and making more efficient use of power—whether it's power generated by burning

coal, splitting atoms, spinning turbines under a dam, converting sunbeams into steam, catching waves in the ocean, or whatever comes next.

Building that portfolio requires a certain skill set and includes a combination of young and experienced engineering talent, as well as several skilled non-engineers to help gather information and coordinate projects.

"What we are hiring now are project managers," says Loftis. "And that's most important, because we need to assure our clients that the project will run as seamlessly and as efficiently as possible."

> t used to be that doing the right thing for the environment was just a nice thing to do, if you could. Now, it's evolved into a real business.
>
> JACOB LIPA
> PSOMAS

Energy project teams at R.W. Beck consist of technologists, economists, financial analysts and others. Fielding such a diverse team enables the firm to provide a range of business services to its clients, and also stockpiles the firm with intellectual capital to evaluate new technologies. "We first have to know enough about a trend to know that it's sustainable," says Corrigan. "That includes the economic sustainability, the environmental concerns and the social community concerns of sustainable organization."

Staffing for the future requires taking into account far more than engineering capability. "You don't just provide technical services, you have to educate your clients," says Psomas' Lipa. "You need to hire not just engineers, but educators."

But just being knowledgeable isn't enough. "When you hire people to work on this kind of technology, they need to be explorers," adds Lipa.

It's a challenge that many firms today embrace. "We live in very exciting times," says Lipa. "It used to be that doing the right thing for the environment was just a nice thing to do, if you could. Now, it's evolved into a real business." ■

Logan Kugler is a business and technology writer based near Los Angeles.

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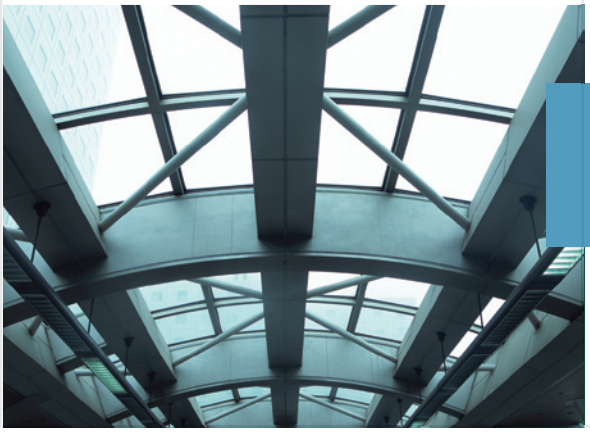

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On the Light

Increased public

South Lake Union Streetcar Boosts Quality of Life

PB provided preliminary engineering, environmental assessment and final design services for the 2.6-mile streetcar line in Seattle.

PROJECT:
South Lake Union Line, Seattle

FIRM:
Parsons Brinckerhoff (PB), Seattle

As the engineering firm chosen to lead the City of Seattle Department of Transportation's (SDOT) consultant team, Parsons Brinckerhoff (PB) performed the initial feasibility study of a network of streetcar lines to reduce traffic congestion and provide residents and visitors with reliable transportation alternatives.

"The South Lake Union Streetcar line had multiple goals," explains PB's Northwest Manager Jared Smith, "including being a catalyst for

transportation demands advance light rail opportunities for Member Firms

ht Track

economic development, linking jobs and housing to the local and regional transit system, and being an initial investment in a network of streetcar lines to be built over time."

After the initial study, PB provided preliminary engineering, environmental assessment and final design of the 2.6-mile, round-trip, streetcar line, including utility relocation, permit acquisition, traffic signal modifications and the installation of the overhead catenary and traction power systems, and station platform and maintenance base design. The line features low-profile, concrete-encased steel rails within a shallow, eight-foot-wide track integrated with the roadway surface along the entire route. "This technology has been developed for modern streetcar operation and enables much faster installation with less disruption to the affected streets, and allows future utility expansion to be performed under the track without disruption to service," observes Cliff Henke, PB's senior analyst for PB's Transit Market Leadership team for the Americas.

Reduced disruption to utilities and reduced reconstruction of roadways helped PB and the entire team meet the challenge of a very aggressive design and construction schedule. "The streetcar was in service a little over two years after the final design was begun," recalls Smith. The City of Seattle also brought the general contractor/construction manager into the project before the design was complete to expedite the process. "This method enables the contractor to determine the project's constructability and feasibility and to deal early with cost and schedule considerations and issues," Smith explains.


Cliff Henke


Jared Smith

Political considerations, such as using local improvement districts to fund the project, were also a challenge, according to Henke. "Through constant dialogue and coordination between SDOT, the mayor's office, and a very supportive development community in the neighborhoods, the project went from initial concept to completion in only four years," he says.

In an era of climate change, rail projects such as the South Lake Union Streetcar Line, which now serves more than 330,000 passengers a year, provide reliable alternatives to single-occupant vehicles. "Data show that where high quality public transportation is provided, people use it and developers build around it. The result is a much lower carbon footprint, higher quality of life and a more competitive regional economy," says Henke.

West Valley Rail Offsets Population Growth

Wilbur Smith Associates completed an environmental impact study and preliminary engineering for one phase of the 5.1-mile line extension in Utah.

Barry Banks

PROJECT:
West Valley Light Rail, West Valley City, Utah

FIRM:
Wilbur Smith Associates, Salt Lake City

With travel demand growing in step with Utah's booming population, voters in 2006 approved a quarter-cent sales-tax increase to build 70 miles of light rail and commuter rail projects—the Utah Transit Authority's FrontLines 2015 Rail Program—connecting Salt Lake City's suburban communities to major work destinations.

Wilbur Smith Associates (WSA) completed an environmental impact study and preliminary engineering of one phase of that program—a 5.1-mile light rail extension from an existing intermediate station south of downtown to the West Valley City Center in west Salt Lake City. "Based upon our performance of the preliminary engineering, we were awarded the contract for the final design of the West Valley line," says Barry Banks, WSA vice president.

Final design services included track and roadway, relocation of utilities beneath the track bed, determining the right-of-ways required to build the line, system engineering and design of the electrical traction power system that drives the train, the design of four major bridges, three intermediate stations and a transfer station at the West Valley intermodal center. Construction began in July 2008, and the line is scheduled for revenue service in 2011. WSA also continues to provide engineering services as necessary during construction.

The West Valley line is being constructed through existing urban infrastructure. It intersects two major interstate highways and crosses the Jordan River and the active Union Pacific Railroad Roper Yard. "Traversing the Roper Yard was a particularly challenging design aspect of the project," says Banks. The 750-foot-long bridge with 330-foot spans was especially complex because the bridge was curved, accommodated both light rail and future bike trails, and the soils in the area were anticipated to have significant settlement. "We overcame the soil issue by performing extensive geotechnical analyses of the ground and determining the size, scope and depth the footings would require to safely support the bridge," Banks explains. In addition, special lightweight embankment materials were used to further address settlement. "We designed the embankments using an expanded polystyrene material that reduced the weight of the embankments and new infrastructure to a zero-balance level, with the goal of creating a more manageable settlement scenario," says Banks.

Other planned lines include the FrontRunner commuter rail between Salt Lake City and Provo, Utah; the Mid-Jordan Light Rail Line; the Airport Light Rail Line; and the Draper Light Rail Line. The entire system is scheduled to be completed by 2015.

Chicago Makes Metra More Accessible

PROJECT:
Metra Composite Material Train Platforms, Chicago

FIRM:
Primera Engineers, Ltd., Chicago

Chicago's commuter-rail system, Metra, consists of several different train lines, including the Metra Electric District, which operates electric trains downtown between University Park, Blue Island and South Chicago to Michigan Avenue. The Electric Line's existing platforms were originally constructed of either timber or pre-cast concrete planks supported by steel beams. Both types of platforms had deteriorated over countless de-icing cycles, creating several safety hazards.

"Metra's goal is to renovate all of the line's stations, improve safety, and incorporate an Americans with Disabilities Act (ADA) requirement for visually and physically challenged individuals," explains Pedro Cevallos-Candau, executive vice president of Primera Engineers, Ltd.

As the structural engineer, Primera designed renovations for eight prototype stations, including the stationhouses and platforms. Choosing the new material that would replace the old platforms was the most important and complex challenge of the project, according to Cevallos-Candau. After examining various available materials, Primera chose Armor-Deck composite material for its ability to withstand deflection and vibration, its strength and its fire resistance. "The Armor-Deck material has a higher coefficient of friction and fewer tripping opportunities," Cevallos-Candau says. The panels are made of a reinforced polymer material that is shaped and incorporated into a granite surface that provides the required friction for safe walking, as well as tactile requirements to aid visually impaired passengers.

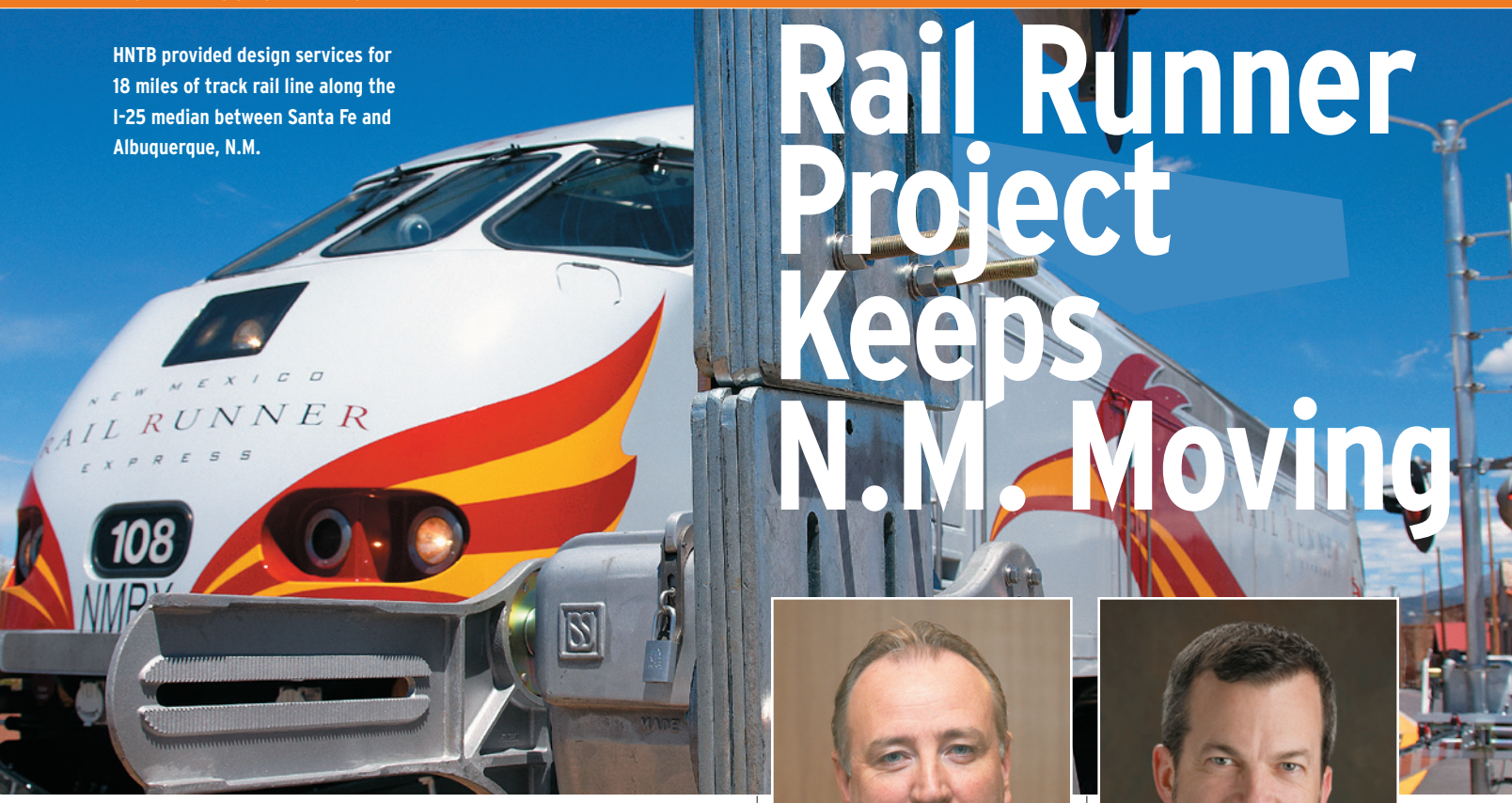
Although composite materials have been used for some time in ship construction and, more recently, to build the next generation of airplanes, its application in structural engineering has not, to this point, been widespread. "To our knowledge, this is one of the first projects built in Chicago using composite plastic materials," Cevallos-Candau notes.

Designing the replacement platforms was a challenge; the stations and platforms are built between two active at-grade or elevated railroad tracks, the electric train cars have undermounted engines and door thresholds at 40 inches above the tracks, and power is conveyed to the cars by a system of overhead wires. "To ensure the safe transit of passengers, each platform was custom built to meet strict geometrical tolerances," says Cevallos-Candau. And to minimize interruption to passenger transit, all construction was performed during off-peak hours.

The structural concept for the train platforms has been replicated by at least two other consultants in Chicago. And Primera has designed two more Metra stations in the Chicago suburbs using the composite material platforms. The system also has been presented to the Chicago Transit Authority and other transit agencies around the country that are evaluating its use, according to Cevallos-Candau.

Pedro Cevallos-Candau

Primera designed renovations for eight prototype stations for Chicago's Metra light rail system.



HNTB provided design services for 18 miles of track rail line along the I-25 median between Santa Fe and Albuquerque, N.M.

Rail Runner Project Keeps N.M. Moving

Tim Cobb

Kent Grisham

PROJECT:
Rail Runner–Santa Fe to Albuquerque, N.M.

DESIGN FIRM:
HNTB, Oakland, Calif.

New Mexico's new Rail Runner commuter-rail service runs 80 miles from Albuquerque to Santa Fe and is an important component of Gov. Bill Richardson's Investment Partnership—a $1.6 billion statewide transportation expansion and infrastructure improvement project that originally was supported by nearly 100 cities, counties, business groups and Chambers of Commerce across the state.

Since its completion in December 2008, the line has helped the state reach its goal of reducing traffic congestion, providing more reliable travel times that are unaffected by weather or accidents and reducing driving costs for commuters.

The project was divided into three phases, with HNTB providing design services for Phase II—consisting of 18 miles of track rail line along the I-25 median. "HNTB was responsible for designing the new alignment, which connects the existing Burlington Northern Santa Fe line to the Santa Fe Southern line," notes Tim Cobb, HNTB's design manager. Major design components included two passing sidings for increased operational flexibility, six concrete railroad bridges, concrete box undercrossings at six roadway points, and six load transfer structures (LTS) at existing stormwater drainage structures.

The New Mexico Department of Transportation (NMDOT) wanted to protect the route's existing stormwater drainage structures without increasing the design parameters, complicating any permitting issues, or requiring a complete replacement of the structures. "Developing the LTS was the most prominent design innovation. Basically, an LTS is a small bridge that is designed to be built over an existing box culvert to transfer the load of the train's weight," explains Cobb.

The aggressive, 16-month schedule between receiving the Notice-to-Proceed (NTP), and completion of the 18-mile rail segment meant that contractors Kiewit New Mexico Co. and Herzog Contracting, along with HNTB, had to ramp up quickly. "With close coordination between NMDOT, Kiewit/Herzog and HNTB, we were able to substantially complete design in the first five months, with construction beginning within weeks of the NTP," says Cobb.

A major construction challenge had to be addressed immediately following design approval. During excavation near the south end of the track, crews encountered 290,000 cubic yards of basalt rock. Unable to rip through the material, crews had to use a drill-and-shoot method to break up the rock formation. According to Kiewit spokesman Kent Grisham, the use of 3D modeling enabled the team to identify an area where material could be relocated and the earthwork kept balanced.

The design-build delivery method used for this project enabled the team to work closely together to meet the owner's expectations and to provide residents and visitors with a more efficient and environmentally friendly way to travel. ■

INSIGHTS FROM ACEC'S INSTITUTE FOR BUSINESS MANAGEMENT

Don't Underestimate Power of Positioning

"You have to know what you are when it comes to promotion of a company," notes David Stone, one of ACEC's core faculty for its **Business of Design Consulting** four-day educational program. "Consider automobiles: Volvo is *safe*; Ferrari is *fast*; Jeep is *rugged*; but Chevrolet is …? The problem with Chevrolet is that they have been trying to be all things to all people."

In positioning your company, Stone suggests three factors to consider: internal capabilities (your company's competent professionals and unique routines), competition (how you outperform competitors or accentuate market advantages) and marketplace (whether stable or volatile, in need of your company's services or looking for different products). Firms can control only the first variable; the other two force them to react.

Once a firm has decided on its position within a market, it can promote its wares to target audiences. Promotion is based on two basic concepts, says Stone: market share, which is the percent of the total market for goods or services that your firm controls; and mind share, which is the percent of potential customers in the marketplace who know about your business. Stone's marketing lesson is that all firms must build mind share before gaining additional market share.

To learn more from David Stone and other Business of Design Consulting faculty, register for the Oct. 21–24 course in St. Louis by logging on to www.acec.org.

Inspiring Young People to Choose Engineering Careers

Since its publication earlier this year, ACEC's ***Choose Engineering as Your College Major*** has increasingly filled a need for firms interested in actively promoting engineering as a desirable career choice for today's middle- and high-school students. "This career guide focuses on the aesthetics, creativity and accomplishment of engineers," says ACEC President Dave Raymond. "Our message is that these professionals are always conquering the next frontier, applying new knowledge and building a better world for tomorrow."

The compelling, 32-page brochure can be viewed on ACEC's related interactive website (*www.acec.org/engineeringcareers*), a go-to source for young people seeking information about professional engineering opportunities. Showcasing the many benefits of a career in engineering—from making a positive impact on the world to career options to job satisfaction—the brochure is ideal for engineering firms, schools and other organizations to distribute at events such as National Engineers Week, career days, school science fairs, or meetings with high-school science clubs.

On the website, students can learn about ACEC's engineering scholarships, order books about engineering careers, link directly to engineering programs at more than 350 U.S. colleges and universities, or scour hundreds of job postings at the ACEC Job Board for an idea about engineering career possibilities.

Employee Health Care Costs Double In 10 Years

Health care costs for both employees and employers have more than doubled since 1999, according to a new Engineering Business Advisory Report released recently by ACEC.

Health Insurance Coverage for Engineering and A/E/C Firms: Challenges and Strategies is an analysis of health care and health insurance options, including fee-for-service plans, HMOs, Preferred Provider and Point-of-Service plans, self-insurance and consumer-directed plans. The report includes a guideline "health plans shopping model" for firms seeking better or more affordable coverage options.

Among the recommendations of the report are strategies for enrolling employees in wellness and disease management programs, restructuring pharmaceutical benefits and consideration of association health plans (with larger pools to absorb risk). The report is available through the ACEC Bookstore at https://netforum.acec.org/eweb/ (keyword search: *health*). Cost to Members: $29 for electronic download, $49 for print.

The ACEC Institute for Business Management provides comprehensive and accessible business management education for engineering company principals and their staffs.

Visit ACEC's online educational events calendar at http://www.acec.org/calendar/index.cfm or bookstore at https://netforum.acec.org/eweb/?site=acec_store, or call 202-347-7474 for further information.

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October 7–10, 2009

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AP PHOTO/FED S. WARREN

Vicente Fox
Former President of Mexico
Opening General Session

One of the world's most important voices on contemporary politics and global business challenges, President Fox will kick off the conference.

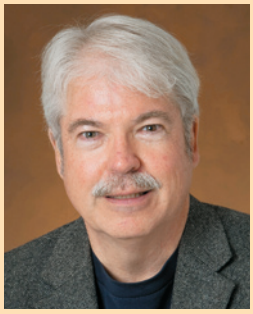
A visionary leader with a deep understanding of economic and social issues, Fox played a vital role in Mexico's democratization and economic revival. He is called upon regularly by leaders throughout the world for advice on complex issues.

Ralph Peterson 2009 Distinguished Award of Merit Recipient

ACEC will present its 2009 Distinguished Award of Merit to Ralph Peterson, chairman emeritus of CH2M HILL, at the upcoming Fall Conference. ACEC selected Petersen to receive the award—the highest honor that the Council can bestow upon an individual—for his lifetime of contributions to the industry and the nation.

Peterson, who will officially retire from CH2M HILL in October, had been CEO of the Englewood, Colo.–based company since 1991. Under his leadership, CH2M HILL grew from a $400 million firm into a global leader in full-service engineering with more than 25,000 employees worldwide and more than $6.4 billion in revenues.

David Doody Mission to Saturn



NASA's Flight Operations Lead Engineer for the Cassini Mission will take you to Saturn and share some stunning discoveries from that planet and its moons.

Local Color Night "Rat Pack" Evening Under the Stars

Return to the swanky nightclub scene—circa 1950s—when cool cats Frank Sinatra, Dean Martin and Sammy Davis Jr. would croon away in their Palm Springs desert hideaway. This tribute group re-creates the signature songs, complete with the impromptu jokes of the beloved entertainment trio. A buffet dinner is included with your ticket purchase. Cost: $125 per person (includes dinner and show)

Educational Session Highlights

Key topics to be discussed by industry experts:

- Stimulus Dollars and You
- Sources of Capital For Your Firm and Projects
- ESOPs and M&As—The Financial Perspective
- Megaprojects: Rising to Challenges, Managing Risks
- Ownership Transition: Financial Aspects
- CASE Convocation
- Risks of Design-Build
- Electronic Communications: Legal Perspectives
- Getting Your Project Started and Ended Right
- Design Professionals' Risk During Construction
- Earn up to 20 PDHs

Special Activities

- Aerial Tram
- Lunch at the famed Spencer's Restaurant
- Palm Springs Living Desert Museum
- Shopping on El Paseo Drive
- Celebrity House Tour
- Desert Tour on San Andreas Fault
- Art and Ceramics

JUSTIN SULLIVAN/GETTY IMAGES FOR ENTERTAINMENT INDUSTRY FOUNDATION

Governor Arnold Schwarzenegger (invited)

ACEC/PAC Activities

- Sweepstakes Drawing—Grand Prize: $10,000 CASH! Cost: $200 per ticket
- ACEC/PAC Golf Tournament on La Quinta's challenging Mountain Course

Full Conference Fees	Early Bird	After 9/04
Member	$ 885	$ 985
2nd + Member, same firm	$ 775	$ 875
Non-Member	$ 1,225	$1,325
Spouse/Guest Fee	$ 295	$ 395
Legal Counsel Forum	$ 350	$ 450

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Room Rate and Hotel Reservations (single/double)

ACEC's room rate is **$225**, single/double occupancy, plus tax. Reservations must be received by **Sept. 4, 2009**. Reservations received after this date, or after the group block sells out prior to this date, will be on a space-and-rate available basis.

Check-in time: 4:00 p.m.; check-out time: noon. Cancellations accepted up to 72 hours prior to reservation without penalty.

To Make Hotel Reservations

All Conference attendees should make their reservations by calling the La Quinta Resort and Club at **(760) 564-4111**, or make reservations online at www.laquintaresort.com.

When making individual reservations, please reference **"ZACE"** to receive the discounted group rate.

Travel Information

Attendees may fly directly into Palm Springs from many hubs. Three major airports serve the Palm Springs area: John Wayne Airport in Orange County (SNA—approximately 100 miles), Los Angeles International Airport (LAX—approximately 130 miles) and Ontario International Airport (ONT—approximately 75 miles). Taxis and shuttles are readily available from the Palm Springs airport.

For more information or to register online, go to www.acec.org.

On The Move

Walid Hatoum

Walid Hatoum was appointed president of **PBS&J International, Inc.**, replacing John Zumwalt, who will remain chairman and CEO of The PBSJ Corporation and presiding director of PBS&J International.

Dr. Paul F. Boulos

Dr. Paul F. Boulos was named president of **MWH**'s new Middle East division. Boulos, a 17-year employee of MWH, will continue as president and COO of MWH Soft, a global provider of environmental and water resources applications software.

Leon Kriebel

Leon Kriebel has been named president of engineering and construction firm **WBCM (Whitney Bailey Cox & Magnani, LLC)** following the retirement of David Mongan. Kriebel served as director of ACEC/Maryland from 2006–2009.

David S. Johnson

David S. Johnson has joined **Wilbur Smith Associates** as chief financial officer. Johnson previously served for 10 years as CFO of Carter & Burgess.

Clifford Eby, former acting administrator of the Federal Railroad Administration, has been named a senior vice president in the Washington, D.C., office of **Parsons Brinckerhoff (PB)**. **John A. Harrison** has been named vice president and principal project manager at PB and will serve as deputy program director for the California High-Speed Rail project.

Clifford Eby

CH2M HILL appointed **Howlie R. Davis** senior vice president and director for U.S. Government Affairs, based in the firm's Washington, D.C., office. Davis was a former counselor to U.S. Cabinet secretaries and political leaders.

John A. Harrison

Stanley Consultants announced: Senior Vice President **Steve Schebler** was promoted to energy business leader; Vice President **Mark Henthorn** was named federal business leader; Vice President **Greg Gesicki**, who was promoted to infrastructure business leader, will continue as president of Stanley Design-Build; Vice President **Sam Stone** was named assistant international business leader; and Vice President **Scott Wonders** was promoted to land development business leader.

Howlie R. Davis

Steven I. Hawtof was named a vice president of **Gannett Fleming**. Based in the firm's Baltimore office, Hawtof will serve as manager of the Transportation Group.

Steven I. Hawtof

John Zito has joined **Woodard & Curran** as a vice president and will serve as the construction management services manager to deliver construction management, design-build and design-build-finance-operate projects.

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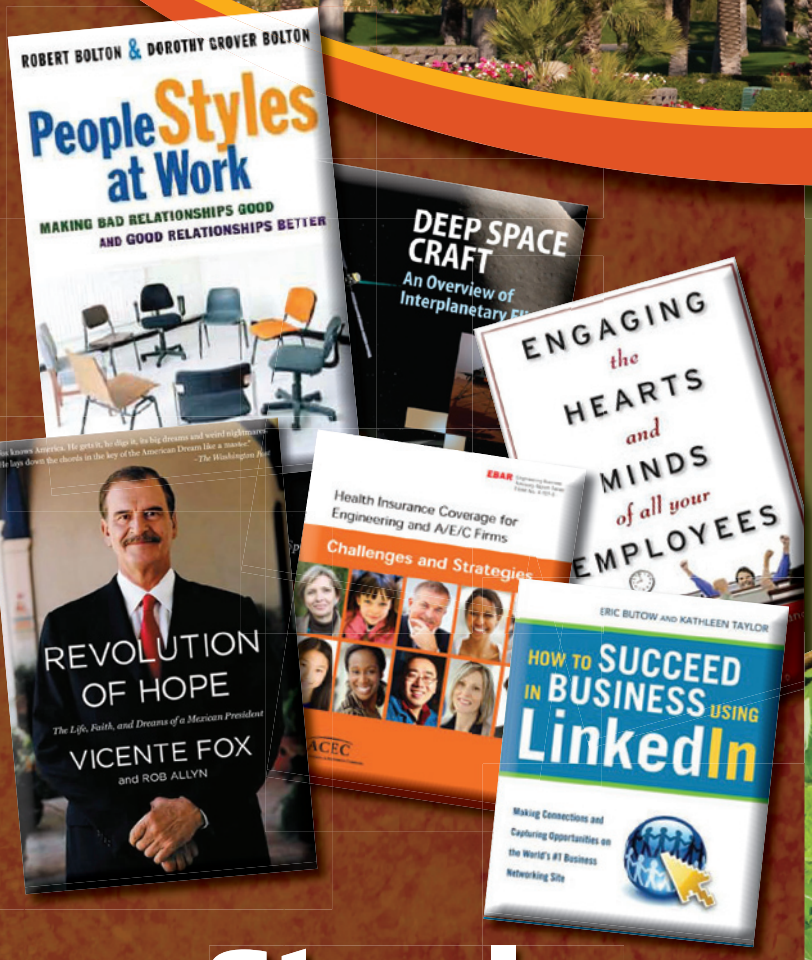


Stop by
our onsite bookstore for
author signings

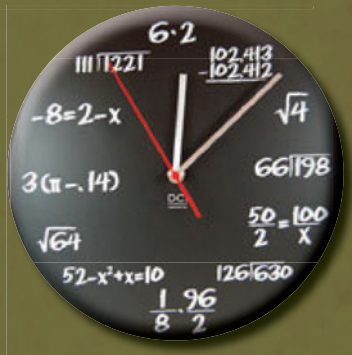
Vicente Fox
(Revolution of Hope)

David Doody
(Deep Space Craft)

and more!

Fall Conference
October 7-10 in Palm Springs, CA

great holiday gift ideas!



Get free shipping during the conference.

Anniversary

This year marks the 90th anniversary of **Kennedy/Jenks Consultants**. Founded in 1919 by Clyde C. Kennedy in San Francisco, the engineering and scientific solutions firm has grown to 25 offices and serves clients nationwide.

"Clyde Kennedy and Harry Jenks could not have imagined the kind of company that would evolve from the engineering practices they established so long ago," says Keith London, president and CEO of Kennedy/Jenks. "Our founders saw that local communities needed help with the water supply and wastewater systems of their day and decided to become consulting engineers to serve them.

"Over the years, we have entered a number of new areas, serving railroads, federal clients and food and beverage manufacturers," says London. "We have expanded our water and wastewater services to include the entire water environment."

David Kennedy, former Kennedy/Jenks president and grandson of Clyde Kennedy, says, "We owe our success and longevity to the clients who have entrusted us with their projects; our founders and alumni who built the foundation for our practice; and the current employee-owners who continue our tradition of engineering excellence, innovation, integrity and personalized client service." Kennedy served as president and CEO for 28 years until turning the leadership role over to London in July 2007. He currently serves as a senior principal and member of the board.

Keith London

Mergers & Acquisitions

ARCADIS has finalized its previously announced merger with **Malcolm Pirnie**, the White Plains, N.Y.-based company active in water and environmental consulting and engineering. Malcolm Pirnie, now a wholly-owned subsidiary of ARCADIS U.S., has more than 1,700 employees with 2008 gross revenues of $392 million.

Said ARCADIS Netherlands-based CEO Harrie Noy, head of a global operation of more than 13,500 employees, "This step makes us a major player in the highly attractive global water market and strongly enhances our position in infrastructure and environment, while providing a better balance in our public- and private-sector client mix in the United States."

Added William P. Dee, president and CEO of Malcolm Pirnie, "The broad support among our shareholders and staff signifies the strategic relevance of this bold step. By joining ARCADIS, we create a world leader in water-related consulting and engineering services, with a global platform that allows us to expand our services internationally."

Harrie Noy

William P. Dee

Welcome New Member Firms

ACEC/California
ADKO Engineering, Inc., Folsom
Bay Land Consulting, San Jose
JLC Engineering & Consulting, Murrieta
Koury Engineering & Testing, Inc. / Koury Geotechnical Services, Inc., Chino
Pat McNulty Professional Land Surveyor, Belmont
TKM Land Surveyors, Santa Clara

ACEC/Colorado
Enginuity Engineering Solutions, Parker
L & C Consulting, LLC, Arvada
Lattimer Engineering, Boulder
McDowell Engineering, Fraser

ACEC/Florida
Biller Reinhart Structural Group, Inc., Tampa

ACEC/Illinois
Craig R. Knoche & Associates Civil Engineers, P.C., Geneva

ACEC/Kansas
Aquaterra Environmental Solutions, Inc., Overland Park

ACEC/Kentucky
Integrated Engineering, PLLC, Lexington
Technical Horizons, Lexington

ACEC/Michigan
Taiga Engineering, LLC, Dansville

ACEC/Minnesota
Olson & Nesvold Engineers, Minneapolis

ACEC/Mississippi
Tice Engineering, Inc., Wiggins

ACEC/Missouri
BIS Fru-Con Engineering, Inc., Ballwin

ACEC/New Hampshire
T R Selling Engineering, P.C., Laconia
Wilcox & Barton, Inc., Weare

ACEC/New Jersey
WSB Engineering Group, P.A., Toms River

ACEC/New York
Dewhurst Macfarlane and Partners, P.C., New York, N.Y.

ACEC/North Carolina
Hatton Associates, PLLC, Charlotte

ACEC/Pennsylvania
Burt Hill Inc., Butler
French Engineering, LLC, Fairchance
KTA Tator, Inc., Pittsburgh
Reinaman Engineering Group, Mechanicsburg
Susquehanna Civil, Inc., Dillsburg

ACEC/Tennessee
Summit Consulting Engineers, PLLC, Nashville

ACEC/Utah
BHB Consulting Engineers, Salt Lake City
Riley Traffic Consultants, LLC, Salt Lake City

ACEC/Vermont
Leach Engineering Consultants, St. Johnsbury

ACEC/Virginia
Barthol Design Associates, P.C., Richmond
Systech Fire Protection, LLC, Manassas

ACEC/Washington
SSA Acoustics, Seattle

ACEC/West Virginia
Dunn Engineers, Inc., Charleston

ACEC/Wisconsin
Quest Civil Engineers, LLC, Wisconsin Rapids

ACEC/Wyoming
Daigle Architectural Engineering, Casper

CEC/Texas
ECM International Inc., El Paso
Loomis Partners, Inc., Austin
Maverick Engineering, Inc., Houston
Project Management Associates, PLLC, Dallas
Snowden Engineering, Inc., Pearland
Ventech Engineers, Pasadena

Calendar of Events

2009

SEPTEMBER

1 Elevating a Project Manager to a Business Manager for Improved Efficiency (online seminar)

8 Making Construction Administration a Risk Management Tool (online seminar)

14-15 Finance Forum, Chicago

15 Creating a High-Performing Board (online seminar)

16 How to Add to Your Bottom Line (online seminar)

22 Streamlining the Organization Toward Profit and Efficiency (online seminar)

29 Winning With Millennials: How to Attract, Retain and Empower the Latest Generation, and Why It Matters Now (online seminar)

OCTOBER

7-10 ACEC Fall Conference, Palm Springs, Calif.

13 Developing Future Leaders: Best Practices and Lessons Learned for Growing 20- to 35-Year-Olds in Leaner Times (online seminar)

20 Lessons Learned in Implementing BIM and IPD in a 900-Person Multidisciplinary Firm (online seminar)

21-24 The Business of Design Consulting (BDC): Managing for Success in a Climate of Change, St. Louis

29-30 Applying Expertise as an Engineering Expert Witness, Dearborn, Mich.

29-30 Building Information Modeling (BIM): The Promise and the 2009 Reality for A/E/C Firms, Seattle

NOVEMBER

10 Risk Management Report Card: Would Your Firm Earn A, F or Incomplete? (online seminar)

12 Follow Up! The (Misunderstood) Heart of Business Development and Positioning (online seminar)

2010

FEBRUARY

23-26 Green Infrastructure and Sustainable Communities: Opportunities in New Markets, New Orleans

Additional information on ACEC's events is available at www.acec.org.

Bradley L. Mallory is president and CEO of Michael Baker Corp. in Moon Township, Pa.

Michael Baker CEO on Climate Change, Sustainability, QBS and Political Action

Q. Your firm for decades has provided services to the energy, pipeline and utility industries. What do you foresee as the potential opportunities and challenges facing our industry in the climate change legislation currently before Congress?

A. I believe our skills will be in high demand to help our customers in these industries adapt and build in the necessary resiliency, beginning with scenario-based planning. The most critical challenge for us and our customers will be minimizing the cost of adaptation and infrastructure resiliency while meeting the intent of the legislation. And, of course, finding the capital necessary to fund the adaptation.

Q. What do you believe is the best approach to solving the nation's funding crisis for surface transportation?

A. Clearly, the best approach is timely passage of the next Surface Transportation Assistance Act. The difficulty there is that it would require additional sources of revenue, which the Obama administration and many members of Congress apparently believe would further tax an already ambitious agenda.

It would appear the time has come to at least begin to debate the replacement of the gas tax, probably with some type of vehicle usage fee, as well as public-private partnerships and tolling.

An 18-month extension of SAFETEA-LU may be the best we can do at this point. If so, ideally some modest cost escalation should be built into it. In no event can we afford a series of continuing resolutions, which would have the effect of bringing the nation's transportation programs to a virtual halt.

Q. How has Michael Baker Corp. embraced "sustainability" as part of its business strategy?

A. Our mission clearly states that we "deliver innovative and sustainable solutions" to our customers. We accomplish this through our internal company practices, such as office recycling, and work with our clients to incorporate sustainable solutions into all of our planning and design work where it is feasible and cost-effective to do so.

Q. Your company has worked closely with ACEC over the years to address liability issues relative to work with federal agencies. What are the key issues in your view, and how important is it for the industry to confront these challenges in a unified way?

A. We appreciate the support ACEC has provided, in particular its involvement in the amicus brief associated with ACEC/Metro Washington. This suit could have a significant impact on Michael Baker Corp., as well as many other Member Firms that support FEMA and the National Flood Insurance Program. The issue of levee liability looms large, and only a unified approach by the industry will be able to convince Congress that a solution is required.

Q. What needs to be done to protect and expand the use of Qualifications-Based Selection (QBS), both at the federal and state levels?

A. We see challenges to QBS coming from many directions. First and foremost, I believe the industry needs to aggressively support agencies that have core engineering expertise and regularly follow the QBS process, such as the U.S. Army Corps of Engineers. We should have an awards and recognition process for such efforts, both on the federal and state levels. Second, we need to rally a coalition to support these efforts in Congress. Third, we need to develop a method for rapid procurement of A/E services. Our customers' procurement departments are stretched way too thin, and they often don't have time to follow what appears to be a long and cumbersome QBS process. We need to offer a more streamlined solution.

Q. Michael Baker Corp. is among a few firms in the industry that has its own political action committee (PAC), which coordinates well with ACEC/PAC. How important is a proactive political program to your business?

A. We are, by nature, a relationship-based business. It is important to us that we help elect and retain legislators at the state and federal level who understand and vigorously support infrastructure-related issues. One way of doing this is to provide financial support to their campaigns, which we do through our PAC. This serves to involve our employees in the electoral process and helps to build and strengthen the relationships we have with the individuals we support. ■



ACEC

Retirement Trust

Top 10 reasons why now is the time to belong to the ACEC Retirement Trust (Trust)

1. **Strong processes that exceed retirement industry best practices**
   If your retirement plan was your engineering project, would you put your seal on it? The Trust would!
2. **A progressive approach**
   We analyze trends, negotiate fees, and offer new products.
3. **Fiduciary protection and oversight**
   RBC Wealth Management, with over 30 years of experience, acts as a signed fiduciary to your plan.
4. **Effective plan design**
   A top tier retirement plan provider in Prudential Retirement.®
5. **Better outcomes for your employees**
   Model portfolios, proven plan features (auto enrollment, asset allocation tools, auto escalation).
6. **Customized, impactful on-site education and financial planning**
   Wells Fargo Advisors, with over 20 years experience.
7. **Broad array of investment options; easy-to-use tools**
   Regular review by the Trust's independent investment advisor; Prudential Retirement's GoalMaker® program.
8. **Time savings**
   The Trust negotiates, administers, monitors, selects, and educates on your behalf so you can focus on your business.
9. **Controlled cost**
   Valuable services + experienced professionals + competitive prices.
10. **Dedicated service**
    Professional assistance, individualized attention for your employees.

To learn more about the benefits of the ACEC Retirement Trust, contact Nancy Barrette of Wells Fargo Advisors, LLC at **800-521-9463** or via email at **nancy.barrette@wellsfargoadvisors.com**.

* RBC Wealth Management, a division of Royal Bank of Canada, provides performance measurement and benchmarking on the Trust (12/31/2008).

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