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ENGINEER

Official Magazine of the American Council of Engineering Companies of Arkansas & the Arkansas Society of Professional Engineers



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Brad Hammond, P.E., president of McGoodwin, Williams and Yates, left, is the new ACEC/A president, while Rob Bullen, P.E., of Mid-South Engineering will lead ASPE.

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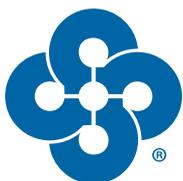
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16-18 Brad Hammond, P.E., left, of McGoodwin, Williams and Yates is the new ACEC/A president, while Rob Bullen, P.E., of Mid-South Engineering is the new ASPE president.

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The style of engineering



Brad Hammond
ACEC President

One of my favorite things I own is a 1970s-era powder-blue tuxedo, complete with wide collars and a frilly shirt. I bought it at a used clothing store to wear to a Halloween party a few years ago, and I cannot bear to part with it. I actually wore it to a recent company Christmas party just to see everyone's reaction. Even though I wore it as a joke, a part of me was uncomfortable with wearing something so clearly out of style.

Clothing styles are a subjective phenomenon. My blue tuxedo is out of style because at some point, a handful of influential designers modified formal wear in a way that eventually our collective society accepted as the new norm.

Engineers have never been confused with fashion aficionados, but style is not limited to clothing. According to Merriam-Webster, "style" is also defined as "a way of behaving or doing things." Like clothing preferences, other kinds of style can be influenced to either change or remain the same.

When I entered the profession more than 20 years ago, my mentor, Carl Yates, began teaching me about professionalism, ethics, and involvement. These things are timeless and should never go out of style.

First and foremost, engineers are professionals, not a commodity group. Forces in our industry continually try to commoditize our work, but there is no substitute for expertise, quality, and judgment. Professional licensure and qualifications-based selection (QBS) protect our professionalism, which in turn protects the public. Bidding professional services does not serve the best interest of our clients or the public, and we cannot effectively educate our clients or the

public without practicing QBS ourselves. Licensure and QBS are primary objectives of ASPE and ACEC, and we need the engineering community as a whole to be on board with these concepts.

Furthermore, if engineers wish to be treated as professionals, we must act in a professional manner. Little things matter. Texting, emails, and social media are useful tools, but we cannot allow the casual nature of these tools to affect the quality of our writing and communications.

Ethics and professionalism go hand-in-hand. Consulting engineers have a responsibility to act ethically, especially when it comes to pursuing work. Our actions define our companies and influence the public's perception of our profession. It doesn't benefit anyone involved when we criticize other engineers' work outside of objective third-party design reviews or pursue work when another firm is already under contract. It certainly does not benefit our profession.

In addition, involvement in professional societies is important not only for the individual but for the profession as a whole. Older generations knew this well, but there is a current trend to avoid organizations that do not directly enhance the individual. Membership in professional organizations continues to decline on a national level. We must continue to recognize that active participation in organizations such as ACEC and ASPE protects our profession, which indirectly affects us as individuals. To this end, a focus of ACEC/A this year is to continue to expand membership as well as encourage participation of individuals within the member firms. We also plan to enhance our communication to educate engineers and members of the general public regarding the work of ACEC and its positive impact on our industry.

Professionalism, ethics, and involvement should never go out of style. But that is up to all of us in the engineering community. Like the clothing industry, the engineering community dictates its own fashion. No individual or group is too small to make a difference. If the style of engineering changes, the result could be much worse than wearing a powder-blue tuxedo.

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With great power ...



Rob Bullen
ASPE President

Before a bridge can be built, a licensed professional engineer must certify its design meets safety standards and codes. Manufactured products used in the building of that bridge, however, may or may not have been designed by a licensed professional engineer.

Currently, 29 states allow for exemptions of employees of industrial or manufacturing firms producing products such as these. Some would argue this lack of a P.E. certification requirement could lead to unsafe products. Fourteen states do not recognize any exemption. In my opinion, engineers should support ending the exemption and requiring a consistent level of licensure.

Why are more government regulations needed? Because safety matters, and a product directly affecting public safety should have the same standards regardless of where it is designed or manufactured. The best way to ensure safety is to consistently put someone in charge of it, and in charge of ensuring consistent standards are applied. That's us, the engineers, and where we come into the picture.

Licensure is about more than just adding a couple of letters to the end of our names. It's about willingly accepting a higher level of responsibility. "Good Samaritan laws" protect individuals from liability if they inadvertently cause harm while trying to help a person in serious need, such as at the scene of an accident. But that protection does not extend to doctors or other medical professionals, because with them, "just trying to help" is not good enough. As paid practitioners, they are expected to be trained, responsible, and to get it right.

So are we. In the area of product design, we are the paid practitioners, and

we are expected to get it right. In the engineering profession, licensed professionals are like the doctors.

Ending the manufacturers' exemption, at least at the supervisory level, would encourage engineers across the profession to become licensed – an assertion I make from personal experience. I come from a manufacturing background where I helped design products where safety was vitally important. My work encompassed a broad range of items, from medical devices to construction equipment and even weapons systems. I was not licensed for the first 15 years of my career and, frankly, never thought much about it. Why should I have? My companies employed many engineers just like me, and I was no different.

It was only after I moved to consulting engineering that I became licensed. Once I started the process, I began to truly appreciate the benefits to me and my profession. It made me a better, more conscious, and safer engineer.

I believe that I should have been held to that same standard when I was designing products that could save people or potentially injure them. As crazy as it sounds, and don't let any attorneys read this, but I appreciate liability – that is, liability that is bestowed on the competent.

I've always liked catchy phrases from the movies, so I'll close with a reference to "Spiderman." One of the iconic quotes in that character's history comes from Peter Parker's Uncle Ben, who tells him soon before his death, "With great power comes great responsibility." The quote was one of the motivations that led Parker to become Spiderman.

I don't think any engineer considers himself or herself a superhero, but lives depend on what we do. We can't squirt webs out of our wrists to save a person in peril, but our designs can keep them from being in peril in the first place.

So let's support ending the manufacturing exemption on products that may ultimately affect public safety. And, in the meantime, let's hold ourselves to the highest of standards voluntarily. We have the power to design products that are certifiably safe, and with that great power comes great responsibility.

In the News

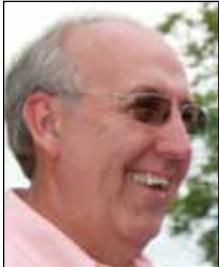
Agency forum to be Dec. 5 at Garver LR offices

The ACEC/A's annual Agency Forum will be Dec. 5 at Garver's Little Rock offices.

As usual, ACEC/A has invited representatives from many of the state's engineering-related agencies, including the Arkansas Highway and Transportation Department, the Arkansas Department of Environmental Quality, and the Department of Health. Steve Hall, ACEC vice president, government affairs, is expected to attend and speak on developments in Washington.

For more information or to register, contact ACEC/A's executive director, Angie W. Cooper, at 501.978.1157, or go to the ACEC/A's website, www.arkansasengineers.com.

Sherman Smith, longtime public works director, dies



Sherman Smith, the longtime Pulaski County director of public works, passed away Sept. 18 at the age of 60.

Smith served on the board of directors of the Arkansas

State Board of Licensure for Professional Engineers and Surveyors and was



Calendar of events

January 3
Submission deadline for national Engineering Excellence Awards competition

January 31
Submission deadline for state Engineering Excellence Awards

March 12
Engineering Excellence Awards
Location: To be determined

inducted into the Arkansas Academy of Civil Engineers.

In Smith's obituary, County Judge Buddy Villines was quoted saying, "Sherman, as director of public works, was a key player in many projects the county completed during the last 17 years. From bridge replacement to bridge building, it was his skill both as an engineer and an ability to work with people that made him an asset to our citizens. As a friend, he had a gift of humor that brought a laugh to everyone he knew."

Born Nov. 10, 1953, in Stuttgart, Smith graduated the University of Arkansas with a degree in civil engineering and married his wife, Delinda, in January 1977. His interests included motorcycles, scuba diving and hang gliding.

Emerging Leaders complete session in team-building

Emerging Leaders, the annual series of training seminars by ACEC/A and ASPE designed to teach engineers right-brain skills in communication and leadership, has met for its first class – a team-building session at the Northwest Arkansas Community College.

Future sessions will cover public speaking, government, and other skills often not taught in engineering schools.

This year's participants are: Jordan Culver, P.E., Ben Perea, E.I., and Seth Yancey, P.E., Garver; Chris Dougherty, P.E., McGoodwin, Williams and Yates; and Kevin Hall, SI, CEI.



Crafton Tull designs, opens its new Conway facility

Crafton Tull's Energy Division has opened a new 13,500-square-foot office building in the Meadows Office and Technology Park in Conway.

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The division employs more than 100 people and serves clients in more than five states. The office was established in 2007 with a staff of five.

Executive Vice President Lane Housley, P.S., said his division had outgrown its previous facility. Some team members were working from garage areas where the floors flooded and summer heat brought inside temperatures into the upper 80s.

“By consolidating our energy services under one roof, we can continue further growth in the community,” he said.

Architects from Crafton Tull factored sustainable practices into every aspect of the design. The exterior features a blending of exposed metals and natural elements incorporating heavy timber and stone. Sustainability is demonstrated throughout the interior with polished concrete, acoustical ceiling tile, low E light fixtures, as well as an abundance of natural light.

“Our goal was a natural building that would highlight the beauty of the Natural State and make the citizens of Conway proud,” Housley said.

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REP. STEVE WOMACK, R-Ark., discussed highway funding, budget challenges, the EPA, immigration and other issues prior to a meeting of ACEC/A's board of directors at Crafton Tull's Rogers office Oct. 10.

Womack: Congress 'kicked can' again

Solution for highway funding elusive in split government, 3rd District congressman says

By **Steve Brawner**
Editor

Rep. Steve Womack, R-Ark., told the ACEC/A's board of directors Oct. 10 that Congress' recent extension of the nation's highway funding mechanism was another example of that body "kicking the can down the road."

Congress in July shored up the rapidly depleting Highway Trust Fund using several methods, including an accounting

maneuver known as pension smoothing where companies can reduce what they pay into employee pension funds. The technique increases taxable incomes and thus the taxes paid.

The agreement kept highways funded through May 2015, but Womack, who voted for the measure, wasn't happy with that solution.

"Whenever Congress is confronted with an issue that involves some type of funding that is going to involve a short-term patch – we call it in our business 'kicking the can down the road' – then you can always count on the funding

mechanism to be unrelated to the underlying problem," he said.

The state's 3rd District representative said Congress must decide how to fund infrastructure over the long term. The current main funding mechanism, the fuel tax, has remained unchanged since 1993, but raising it is politically difficult, and other methods have failed to gain support. However, Womack said a solution must be found because infrastructure spending is too important.

"I'm a firm believer that this is one of those areas where government spends money that if you do it right, you're go-

ing to get many, many returns on those expenditures, and you're going to be able to support a whole lot of other programs as a result," he said.

Womack said it will be difficult to change the status quo in Washington unless something happens in November. Congress is divided between a Republican House and a Democratic Senate, with a Democrat, President Obama, in the White House. The House is expected to remain Republican; the Senate is a toss-up. If Republicans were to control the Senate, consensus in Congress would be possible, he said.

The divided government makes it harder for Congress to rein in the Environmental Protection Agency's enforcement activities, he said. Were Congress not so divided, it could control the EPA's funding, which is included in appropriations bills for the Department of Interior. Unfortunately, Congress has been unable to complete a regular appropriations process since he became a member in 2010, instead funding the government mostly through continuing resolutions that simply maintain funding at current levels. Womack said Northwest Arkansas is in danger of falling out of compliance with the Environmental Protection Agency's Total Maximum Daily Load program regarding phosphorus levels in the Illinois River watershed.

That, he said, "would cripple the future growth of Northwest Arkansas if that happens unless one of you smart engineers can tell me how we're going to overcome that."

Reinstate, reform earmarks

Womack said Congress could better fund infrastructure projects by reinstating the earmarking process, albeit with significant reforms. Earmarks – congressionally directed expenditures for specific projects – were banned by Congress in 2010 because they had gained a reputation as pork barrel projects meant to benefit individual congressmen, such as Alaska's infamous "bridge to nowhere."

Womack said most earmark projects actually were quite useful, and that doing away with them has transferred the power of the purse from Congress to the executive branch – a constitutionally questionable handoff. He said no one ex-

cept maybe Sen. John Boozman, R-Ark., knows the infrastructure needs of his district better than he does, including completing I-49 and channeling the Arkansas River to a 12-foot depth.

Womack, who voted for the earmark ban, said the process should be reformed so that the spending is more transparent and involves a cost-benefit analysis. Individual projects should not be included in major, must-pass legislation.

"If you did (those reforms), I think all of the objections to congressional-directed earmark spending would probably melt away," he said.

Womack, who faces only Libertarian Grant Brand in his race, will return to Washington Nov. 12 for a so-called "lame duck session" before the swearing in of the new members. By Dec. 11, Congress either must pass a continuing resolution to fund the government for a few months, or it could enact funding for the government until the end of the fiscal year. Its actions will partly be determined by what the voters say in November, Womack said.

Womack explained some of the challenges of funding a government that is spending \$500 billion more than it collects this year and is nearing \$18 trillion in debt. Two-thirds of all government spending goes to mandatory programs such as Social Security and Medicare that are expanding in size and which Congress doesn't review on an annual basis. Because those programs are so hard to touch politically, Congress would have to cut half the discretionary budget that funds the rest of the government in order to balance the budget.

Among other discussion topics, Womack said he was more optimistic than ever that a border security bill will pass because of increasing concerns over terrorism, human trafficking, drugs, and the spread of disease. After the border is secure, immigration reform can be considered on a piecemeal basis. A big package to both secure the border and enact immigration reform isn't possible because too many members of Congress do not trust President Obama to enforce the law, he said.

Asked about his political future, Womack said he realizes he would be considered a frontrunner if Boozman de-

cidated not to run for re-election. However, he said he would need a "seriously good opportunity" to consider leaving his seat in the House. Even though he'll only be in his third term if elected, he already has midlevel seniority on the powerful Committee on Appropriations, which sets specific funding amounts, and will compete to be one of the subcommittee chairmen next year. Womack said the agenda is set by committee chairmen and ranking members of the minority party.

"And if you're not one of those, you're one of the boys, and the committee staff and the chairmen are going to tell you what they're going to do," he said. "That's how this thing works, and it's to the Third District's advantage that their member of Appropriations becomes a subcommittee chairman quickly and then moves up the chain of the subcommittees as those vacant seats make themselves available. Eventually I'd love to chair the Defense Subcommittee. It only controls \$600 billion in spending."

After the visit, Womack was presented a campaign donation on behalf of the ACEC's political action committee.

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Vote Nov. 4, and then stay involved

Engineers should support, inform pro-business, pro-infrastructure candidates

On Nov. 4, Arkansans will elect candidates for offices at all levels of government. Most of those offices will affect the engineering profession, engineers and their families in some way. And yet some engineers will choose not to go to the polls.

True, it's rare for a race to end in a tie or be decided by one vote, though it does happen. So if you stay home and tell yourself that your one little vote probably won't make a difference, you'd probably be right.

But a lot of "one little votes" can make a huge difference in the final outcome. In the 2012 elections, the difference between a President Obama and a President Romney was three counties won handily by Obama – those containing Cleveland, Philadelphia and Fort Lauderdale. In the 2000 elections, a switch of 269 votes in Florida would have made Al Gore president of the United States. I wonder how many engineers didn't vote in Florida that year.

So yes, voting does matter – especially at the state and local levels, where a few votes can make the difference in who gets elected, and where politics can get very personal.



Angie W. Cooper
Executive Director

ACEC/A and ASPE are nonpartisan organizations. The ACEC's political action committee supports candidates of either party who are pro-business and pro-infrastructure. Many candidates do not have those same priorities, and neither do many voters. Engineers must make their voices heard to counter their influence.

I encourage each of you to go to the polls Nov. 4 – actually, to early vote if there's still time – but voting represents only the most basic of a citizen's duty to the country, and it's only the most basic of an engineer's duty to the engineering profession.

Two months after the election, a new governor and a new Legislature will gather in Little Rock. Because of term limits,

at least a third of the House of Representatives will be freshmen, many with little experience dealing with important issues, including infrastructure.

When they arrive, they'll be beset with an avalanche of responsibilities and a chorus of voices demanding their attention. They'll vote on thousands of bills, often with little information to guide them. Special interest groups will tug at their wrists asking for their attention and, ultimately, their votes.

ACEC/A and ASPE will be fighting for engineering. But the organizations will be much more successful if members are involved. Legislators know we are paid to influence them, and they know that you are not. Polite phone calls and sincere emails from a few constituents can greatly influence how they vote.

These next six months can see a new emphasis on infrastructure in Little Rock, or infrastructure could be pushed to the rear of the line behind other important priorities. Unfortunately, the problems we solve usually don't look like a crisis until they become one, so lawmakers can pretend to ignore them. Arkansas will only invest in its future if the right people are elected, and only if they have the right information once they arrive in Little Rock. So go to the polls Nov. 4, and then stay involved afterwards. It matters both times.



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PROUD LEGACY. Brad Hammond, P.E. president of McGoodwin, Williams and Yates, and the new ACEC/A president, stands before photos of the firm's founders. From left they are Terry Williams, P.E.; Carl Yates, P.E.; and L.M. McGoodwin, P.E.

Hammond's goals: involve, engage

New president says retention as important as growth in building ACEC/A

By **Steve Brawner**
Editor

When Brad Hammond, P.E., was a boy growing up in Fayetteville, he would accompany his father, Dick, to the job sites where he worked as a bricklayer. Dick Hammond was a highly skilled individual who took pride in his craft and even in his work clothes, and his son admired him. One day when the son was very young, he told his father that he too

wanted to be a bricklayer when he grew up. His father replied, "I will kick your butt if you do that."

Hammond instead became an engineer, and eventually president of McGoodwin, Williams and Yates. But he never stopped admiring his dad and never forgot his example. To this day, he notices poor masonry work in buildings under construction, and he still has his dad's bricklaying level.

"My father was a huge influence on my life from beginning until now, even though he passed away in '98," Hammond said.

Hammond, 45, this year's ACEC/A president, knew before his engineering career really started that he wanted eventually to be in management. After graduating in 1992 from the University of Arkansas with a B.S. in civil engineering, he immediately entered the UA's MBA program. He explained, "I also have kind of liked the more right-brained side of things, too, and wanted to make sure that I could have a good background in writing and communications and just general business philosophies."

While completing his MBA, he also was working part-time for McGoodwin,



Williams and Yates, which specializes in water and wastewater treatment and other infrastructure projects. When he finished the program, he began working full-time on a wide variety of projects, giving him a foundation for managing the firm's many clients. Meanwhile, he received on-the-job leadership training by working with one of the firm's principals, Carl Yates, P.E., who happened to be his uncle.

In 2004, the firm began undergoing a transition process in preparation for Yates' eventual retirement. It eventually was decided that Hammond would be president while the other principals would be vice presidents. Hammond was 36 and began making his own transition from engineering to management, which required some adjustments. After all, engineering has cut-and-dried, black-and-white answers. Managing people? Not so much.

"The simple fact is either a bridge stands up or it doesn't stand up, and it had better stand up if you designed it," he said. "If you're dealing with people, that's a huge gray area, so there's no right or wrong answers when you're dealing with people. Everybody's different. You're right that sometimes you question yourself on, what could I have done something differently in dealing with this person or that person? But at the end of the day, you've got to just go with your gut feeling and make sure that you've done something that is fair to all concerned and is ethical and the right thing to do."

Hammond leads a firm with a staff of 32, including 12 engineers, all of them P.E.s and all of them graduates of the University of Arkansas. One, Lane Crider, P.E., ASPE's current past president, was a schoolmate of Hammond's. The two met in seventh grade.

" We want to communicate and engage. ... Of course we always want to grow. We always want to try to expand our membership, but we also want to take care of the members that we have and engage them as much as possible. "

Hammond's many years of management and leadership will be important assets now that he will serve as president of ACEC/A. His goals for the

organization this year include identifying engineers in firms that historically haven't been active and getting them involved. While finding new members is important, retention of current members also will be a priority. Another goal is developing more communication tools for members. Newsletters and email blasts are a possibility.

"We want to communicate and engage. ... Of course we always want to grow. We always want to try to expand our membership, but we also want to take care of the members that we have and engage them as much as possible," he said.

ACEC/A is preparing for the 2015 state legislative session. A new governor will be in office, and because of term limits, at least a third of the House of Representatives will be incoming freshmen. Hammond said the association has a good Government Affairs Committee chaired by FTN's Dennis Ford, P.E., and an effective executive director in Angie Cooper.

"We just need to support her and make sure that we can be there when she needs us and be watchful," he said. "And that's the key in a legislative session is to be watchful for things. You don't want to just be reactive, but you still have to make

sure you see things in the beginning that might affect you."

As president of ACEC/A, Hammond leads an organization composed of his competitors. That's not a problem. His involvement has allowed him to meet engineers he never would have known and discuss mutual challenges and clients. He's pleased with his board of directors and confident in the member firms' ability to accomplish their shared goals.

"I think for the most part, we all work together really well," he said. "We all recognize that we all act in ethical behaviors, and the key is as long as everybody acts ethically and responsibly and professionally, there's no reason for us not to be friendly competitors. I think the only thing that can make us angry or disappointed with one another is if somebody acts unethically or goes after business in an unprofessional manner."

Outside of the office, Hammond spends much of his time as a family man. He married his wife, Allison, in 2008 when he was 39, which he jokingly explained by saying, "It took a long time to find the right girl that thought I was the right guy." She is the assistant director of the UA's creative writing program and has "kind of awakened in me that right brain side that I had in high school," he said.

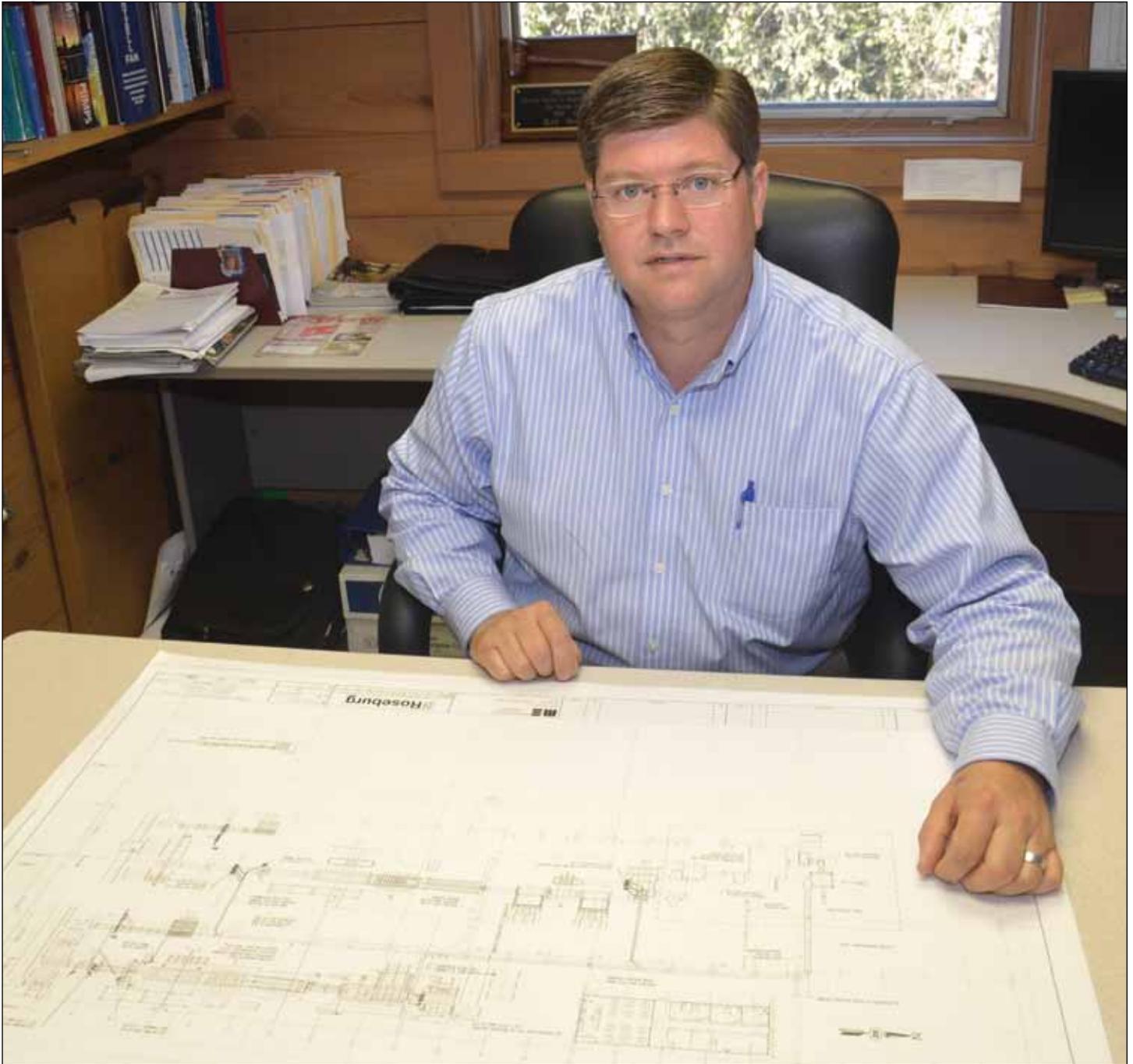
The couple has two sons; Hunter, 3, and Wylie, 2. In his spare time, Hammond is a graduate advisor to his old campus fraternity, Phi Gamma Delta.

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ENVIRONMENTAL ENGINEERING. Rob Bullen sits with plans at his desk at Mid-South Engineering. The firm specializes in the wood products industry, including dimensional lumber, board products and biomass energy systems.

Bullen: Focus on diversity, youth

ASPE president says young engineers will get involved if activities are hands-on

By **Steve Brawner**
Editor

A few years ago, attendance at the ASPE's Hot Springs Chapter had fallen to five or six per meeting. Now, it's back up to 25-30.

The chapter's rebound offers lessons that Rob Bullen, P.E., this year's ASPE president, can use to build the statewide organization.

"The key to the local chapter is keeping a focus on something that interests more than a core group – diversification of the material covered, not sticking all with one discipline," he said.

Hot Springs Chapter meetings have included presentations on traffic surveys

and sewer systems. The group makes a practice of touring facilities, which is an important tool for attracting younger engineers.

"The new, younger generation likes to be hands-on, likes to see," Bullen said. "They can read on the internet. You want to give them something that they can't do every day."

Bullen, a project engineer with Mid-South Engineering Company, wants

ASPE to work interactively with chapters. He'd like to see an emphasis on licensure, which isn't always stressed in engineering schools. He said ASPE should look outside of engineering firms and encourage engineers working elsewhere to join the organization.

Another goal is having a presence in schools. Bullen, a married father of four who is active in the Scouts, has been involved in the FIRST family of robotics competitions and hopes more engineers will volunteer their time.

"If we're not careful, we're going to have a bunch of youth that believe that all work is done on a computer and no one has to think and take a new train of thought," he said. "Innovation comes from the brain, not from a computer, and our youth need to learn that and need to be hands-on in doing that."

Mid-South Engineering specializes in the wood products industry. The firm works with companies producing a variety of dimensional lumber and board products.

Biomass energy specialty

Some of the company's most interesting work involves biomass energy systems – a potentially lucrative industry for timber-rich Arkansas, which wastes a lot of products that could be turned into energy. Through gasification, which is burning in the absence of oxygen, and a modified Fischer-Tropsch process, trees

can be turned into biocrude. Industrial wood pellets can offer the same energy density as coal – and increasingly, it makes economic sense to do so. While others engineer the chemical conversion, Mid-South does the material handling and processing as well as environmental cleanup and energy recovery.

One of Bullen's first projects at Mid-South was a biomass application at North America's largest oriented strand board (OSB) plant. The plant receives 250 log trucks a day and produces almost a billion square feet of product a year using bark and waste product as its energy source for heating and drying, he said. The only waste produced is ash.

Mid-South isn't really positioning itself as a "green" company in the classical sense. Instead, it's providing environmentally responsible and economically viable solutions. And that's how to protect the environment – not by scolding people, but through engineering.

"Bioenergy has been a big buzzword here lately," Bullen said. "These plants have been doing it for 40 years. ... That OSB mill, for example – the main burners are 216 million BTU-an-hour burners. That's all from bark off the trees, so they're recovering everything that they can. That would equate to a couple of million dollars' worth of natural gas a year that they save by burning the bark."

The Baltimore native's engineering career has involved many types of disci-

plines. While in college, he worked with the National Institutes of Health, eventually graduating from the University of Maryland with a degree in mechanical and biomedical engineering.

He then went to work at Johns Hopkins managing the instruments and daily operations of its pulmonary and critical care division. The job gave him a chance to research high-resolution imaging of pulmonary vessels and scanners. He also worked at night with the trauma team.

He worked four years at AAI Corp. in Hunt Valley, Md., as a manufacturing engineer doing prototype design and design for manufacturability on aircraft, counterterrorism and countersniper technologies. He still has a prototype test round he fired that could be programmed to burst at a certain distance with an accuracy of plus-minus one meter at 100 meters. The gun's laser-range finder calibrates the distance, while accelerometers in the round count its rotations and measure its forward acceleration.

Bullen moved to Pine Bluff in 1999 to work as a design engineer for Strong Manufacturing, an industrial equipment company, designing concrete mixing and pumping systems. From there he moved to Mid-South Engineering Company in 2004.

His wife, Lori, is an electrical engineer with Thermal Systems Engineering in Hot Springs,

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ACEC/A Member Spotlight

Hawkins-Weir: Rooted and growing

Water/wastewater firm opens Little Rock office; hasn't forgotten beginnings

Neither Hawkins nor Weir still work at Hawkins-Weir, but the examples they set continue to guide the firm.

Ronnie Hawkins, P.E., started the firm in 1980 and was joined by Larry Weir, P.E., in 1992. From the beginning, the firm specialized in municipal water and wastewater while also doing private work, most of it commercial.

Weir retired in 2008 and became an instructor at the University of Arkansas, while Hawkins retired in 2012 and still sits on the board of the Arkansas State Board of Licensure for Professional Engineers and Surveyors.

Brett Peters, P.E., the company's president and CEO, said their legacy still guides the firm.

"Ronnie and Larry both, they emphasize service, not only to our clients but to the profession itself, and that's how we've tried to differentiate ourselves through the years is by just exceptional client service," he said.

The firm began the transition years ago to the leadership of Peters, Chief Financial Officer Barry McCormick, P.E., and others. Asked by the founders if they wanted to add their names to the firm, Peters and McCormick declined, reasoning that its brand was already established. Eventually, Peters said, it may even be called "HW."

"We've already identified the third generation, if you will, moving forward," he said.

Headquartered in Van Buren, the firm has six owners, 11 engineers and 28 total staff and recently expanded by purchasing a building in Little Rock – appropriately on Natural Resources Drive. Peters said the firm needed to expand outside its base and decided Little Rock would give it a statewide presence. Aaron Benzing, P.E., started and manages the office while Peters drives back and forth.

"We have a staff of five here now with room to grow, and we've had some suc-



THE SUNNYMEDE PUMP STATION in Fort Smith, top, sends wastewater to the Sunnymede Peak Wet Weather Flow Facility. That facility uses a physical chemical-based high-rate clarification process to treat storage water in a peak wet weather event – a process that holds promise for treating wastewater itself, said Hawkins-Weir President and CEO Brett Peters, P.E. At left, the Sallisaw Water Treatment Plant, a \$17 million project. Below, the South 28th Street Pump Station in Van Buren.



cess not only here in Little Rock but in Jacksonville and in El Dorado and some places," Peters said. "It's been a good move for us. It's exciting."

The company specializes in water and wastewater projects. It also performs sanitary sewer evaluation surveys, does street and drainage work, and designs bridges at the county level. Among its biggest projects has been a \$17 million water treatment plant in Sallisaw, Okla., and the \$14 million Sunnymede Peak

Wet Weather Flow Facility in Fort Smith, which helps store and even treat stormwater overflow.

The Sunnymede site uses a high-rate clarification process that Peters said could change how wastewater is handled during peak wet weather events. Those types of events tend to overwhelm the systems and cause an overflow. Many facilities choose to simply store the wastewater until the event ends and the water has subsided. High-rate clarification is a physical chemical process using polymers that bind solids to sand, causing them to settle so they can be pumped out. While the process is now being used in storage, Peters said it someday could be used to treat the wastewater itself.

"It is a possibility that could change the way wastewater's dealt with not only in Arkansas but nationally, and we're excited that we've been a part of some of those projects," he said.

Engineering Marketplace

ETEC helps build two water plants

Environmental Technical Sales provided equipment needed for two new water plants: the Lonoke-White Public Water Authority and the Tupelo Bayou Wastewater Treatment Plant.

The Lonoke-White Public Water Authority's \$56 million plant will serve eight water systems: Austin Water; Beebe Water & Sewer; Furlow Public Water Authority; Grand Prairie Bayou Two Public Facilities Board; Jacksonville Water; North Pulaski Waterworks; Vilonia Waterworks Association; and the Ward Water & Sewer System.

It will treat up to 10 million gallons a day from Greers Ferry Lake. Bond Consulting Engineers was the lead engineering firm, while Crist Engineers designed the intake and the water plant.

Conway Corporation's \$67 million Tupelo Bayou Wastewater Treatment Plant is capable of treating 16 million gallons a day. The plant was needed to meet the requirements for a new permit and because of the city's growth. It replaces a plant that originally came online in 1980.

Brett McDaniel, P.E., senior water systems engineer, said Garver, the engineering firm, "did a great job. They were able to work through the challenges of construction and help keep the change orders to a below industry standard percentage."

ICM helps repair collapsed tunnel

Improved Construction Methods this year helped repair a collapsed utility tunnel by stabilizing the structure by bonding it with a waterproof urethane foam.

D. Tanner of J&D Construction said a seven-foot corrugated metal utility tunnel, which was connected at an acute angle with a concrete tunnel, had collapsed after water had rusted out a section of the pipe. Rocks had fallen into the opening, creating a void underneath the concrete above.

ICM helped stabilize the stone by injecting the rotted opening with urethane, creating a waterproof bond. Then ICM cut and fabricated metal plates, coated them on both sides, and attached them to the existing structure of the tunnel. The same urethane that stabilized the structure was used to fill the voids between the new metal and the existing pipe, as well as the void between the metal and concrete pipes. When they were done, the metal pipe was repaired and was seamlessly sealed with the concrete pipe.

"I think they do good work," Tanner said. "I enjoyed working with them."

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