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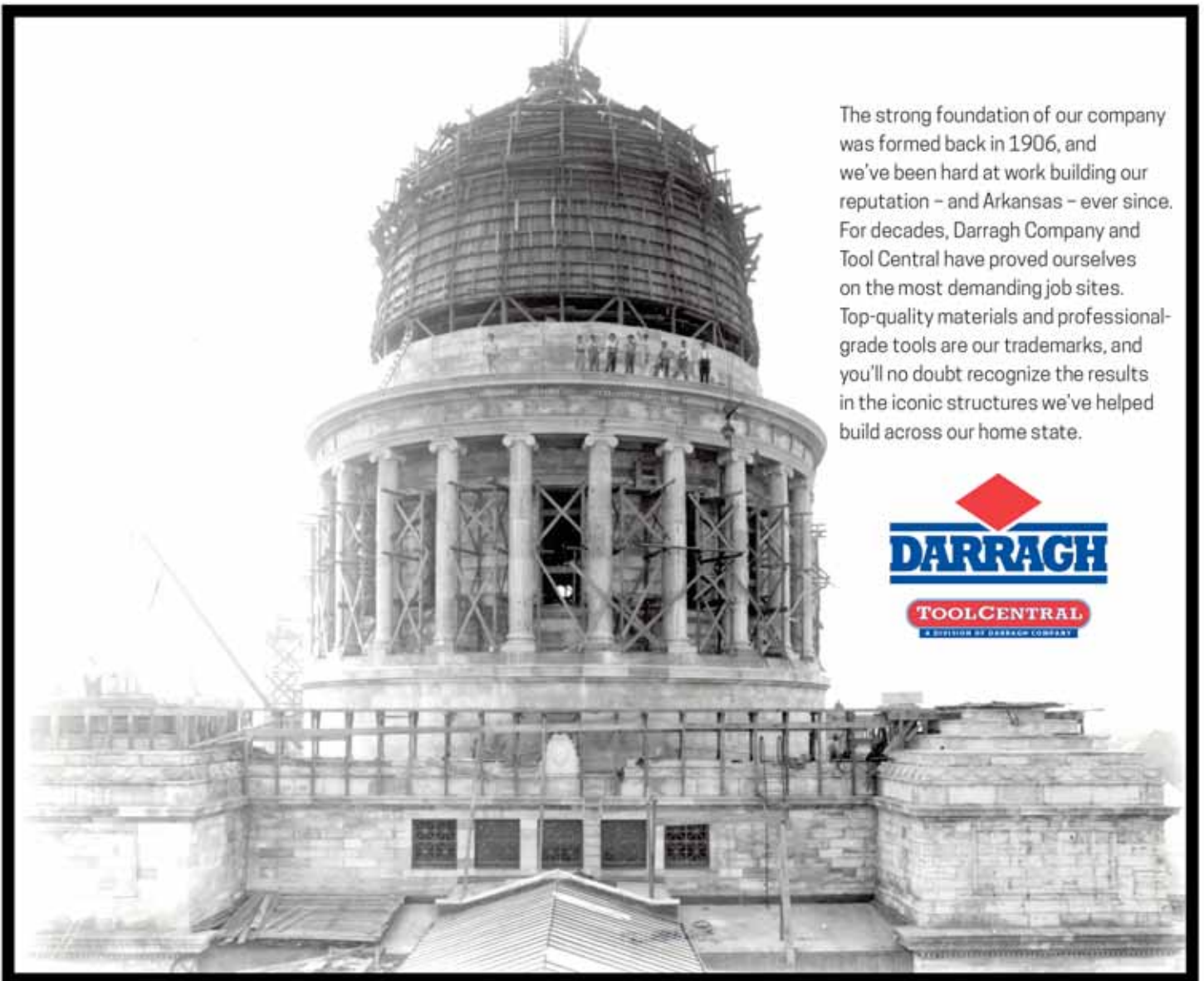


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Arkansas State Capitol under construction, 1910

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On-board cameras

for Commercial Construction Fleets

*by Jeffrey Swann
PPGMR Law, PLLC*

CAMERAS ARE NOW AN INTEGRAL PART OF EVERYDAY LIFE. THEY ARE VIRTUALLY EVERYWHERE WE GO, WHETHER ON OUR OWN CELL PHONES, ON OUR CARS, OR IN PUBLIC FACILITIES SUCH AS GROCERY STORES, GAS STATIONS, AND BANKS. MORE RECENTLY, CAMERAS HAVE BECOME POPULAR IN THE CAB OF VEHICLES, PARTICULARLY WITH OPERATORS IN THE TRUCKING AND PASSENGER TRANSPORTATION INDUSTRIES.

So popular, in fact, that the largest commercial trucking companies are installing them in every single one of their rigs. These transportation companies are enjoying the benefits of on-board cameras as tools for driver accountability, safety instruction, accident claims analysis, and fleet efficiency. These benefits, they say, far out-weigh the cost of implementation and maintenance, as well as the push-back from some drivers viewing them as an invasion of their workspace. Those in the construction industry—often with a fleet of rolling stock and heavy equipment racking up miles—face ex-

posure similar to transportation companies. Because the benefits of on-board cameras enjoyed by the transportation industry would equally apply to construction fleets, perhaps it is time for those in the construction industry to take notice.

How do on-board cameras work?

In order to assess the potential value of cameras, one must understand what exactly an on-board camera is designed to do. In its most basic form, it is a video camera that captures the vehicle and its surrounding environment. Nearly all employ outward facing lenses

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Cameras

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that capture what is going on around the vehicle. Popular now are more advanced systems that gather video and sound from multiple lenses, including one facing the interior of the cab, in conjunction with a data recorder that captures engine levels, brake and clutch use, and signal data while plotting vehicle's movement via GPS. These systems yield an astounding collection of data.

On-board cameras differ from most other cameras in one major respect. On-board cameras generally do not accommodate live-streaming, nor do they continuously save video that can be played back at the will of the owner. Rather, on-board cameras are engaged with the vehicle's ignition and record video only upon a "triggering event." A "triggering event" can be hard braking, a sudden deceleration or collision, an alert from other safety systems, or the like. When a "triggering event" occurs, the camera records the video preceding the event—usually somewhere between 8 to 20 seconds total. With most on-board cameras, the concise amount of data is stored on an on-board device that can be either manually downloaded or automatically uploaded to a cloud or online server for remote access.

The Promotion of Safety

The primary benefit of on-board cameras is the promotion of safe driving—a common goal of all commercial fleet owners including those in the construction business. We all remember having our teacher in the front passenger seat when we were first learning to drive. We were focused on driving, we were not in a rush, our hands were at 10 and 2 o'clock on the steering wheel, we made three point turns, and we were not taking any chances. This was because we knew we would be held accountable for our mistakes.

On-board cameras have the same effect of promoting safer operations through accountability. The existence of on-board cameras encourages drivers to focus on the task at-hand and avoid unsafe driving behaviors. Almost unanimously, drivers of vehicles with cab-facing cameras admit that they are dissuaded from obvious dangers. This includes making phone calls, texting,

Facebooking, using tablets, eating, and (yes) leaving their seat while driving on cruise. And according to most drivers, cameras cause them to avoid erratic driving behavior such as passing in narrow spaces, changing lanes without signals, and so on. Knowing an employer will get a report of any "triggering event," drivers are incentivized to mind their p's and q's, resulting in more attentiveness and safety consciousness behind the wheel.

Likewise, on-board cameras create opportunities for coaching that would otherwise not exist. Close-calls and near-misses do not show up on vehicle inspections by fleet managers. Without cameras, fleet owners are left to rely on reports of unsafe driving from third party

*Fleet owners
are able to
recount the
events from
an unbiased
truth-teller
when an
accident does
occur.*

**Accident
reconstruction
matters a
great deal.**

observers or, even worse, the driver reporting against himself or herself. With cameras, companies can take advantage of "triggered events" due to unsafe driving that fly under the radar and do not result in an accident. Video of unsafe driving can be reviewed by the fleet owner and driver, and they can work together to determine how best to avoid the situation in the future. Additionally, not only do they create opportunities for coaching the driver involved, a video can also be shared with an entire team of drivers for educational purposes.

For good drivers, these cameras should be well-received. Cameras work to protect them from any bad drivers in the fleet. With on-board cameras, employers know exactly which of their drivers need coaching based on the number and nature of "triggering events." Employers can reward its drivers with no triggering events and coach-up others. Cameras also work to protect drivers from bad drivers on the road. Owners can exonerate a driver through the use of video to determine that a "triggering event" was unavoidable and no fault of the driver.

At the end of the day, the consensus in the transportation industry is that on-board cameras make for better and safer drivers, and safer drivers equates to reduced costs for fleet owners. Reduced costs of collisions, claims, insurance, fuel use, and vehicle repair all work to improve owners' bottom lines. Fleet owners enjoy other, less tangible benefits of safe driving as well, including improved good will, driver retention, and branding. There is no reason construction fleet owners would not enjoy the same.

The Unbiased Witness

Another benefit of on-board cameras is that fleet owners are able to independently recount the events from an unbiased truth-teller when an accident does occur. This may be helpful in situations where the driver is unreliable, has a perceived bias, or has a story that conflicts with another witness. Likewise, it may even be critical in situations where the driver cannot recall, was incapacitated as a result of the accident, or is no longer alive.

When it comes to liability assessment, accident reconstruction matters a great deal. The on-board video can be helpful when assessing potential liabilities and claims. It helps to know whether

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the light was green or red, which driver crossed the line, and what your driver was doing. With an on-board camera, fleet owners are able to quickly obtain such information vital to making a decision on any claims. And, they are able to obtain the information from an unbiased witness, a witness who does not blink, a witness who does not have a vested interest, a witness who always tells the truth, and a witness who observed from multiple angles.

The video captured by on-board cameras has also proven useful in other non-accident related instances. For example, on-board cameras have helped prevent and prosecute theft and defend traffic infractions.

Drawbacks and Other Legal Issues

The biggest drawback of installing and utilizing on-board cameras is cost. There is the cost of actually buying and installing the cameras, including the time that the vehicle has to be out of service and any maintenance fees. There is also the cost of maintaining the equipment and gathering data either through manual download or automatic upload to the cloud or a server. These costs, both the installation and computing costs, are important to consider because they can render the on-board cameras too costly to employ. In conducting a cost-benefit analysis, one obviously should consider

the bottom-line cost savings in the reduction of collision, insurance premium, repair, and litigation costs. One should also consider, however, the priority of safety among company values, the brand of the company, and the exposure of the company's fleet to future claims and liability.

The other main drawback to on-board cameras is the pushback from some drivers related to privacy. Installing cameras in the vehicles where drivers spend a significant amount of time, especially time away from work, can be hard to sell. Drivers often have concerns that their bosses will be watching their every move, even off the clock. These concerns are further amplified when companies choose to employ cab-facing cameras.

Combatting driver privacy concerns can be difficult. The best advice is to educate the drivers on the equipment itself and adopt a policy of absolute transparency. Camera selection and specifying the definition of "triggering events" also play a role here. Drivers are seemingly much more receptive to on-board cameras when they are made aware there are only front facing cameras that save short segments of video surrounding a triggering event. Explaining exactly how the camera operates, what and when it records, and that the camera is actually there for the driver's protection is often enough to convince drivers to accept a camera's presence in the cab.

On board cameras give rise to at least one significant legal issue that is worth noting. If you employ on-board cameras, you must take reasonable care to preserve the videos that are, or may be in the future, relevant to litigation. This rule applies regardless of what is actually captured. It does not matter if someone reviewed the video and can testify as to its contents. You should hold the video in safekeeping, and you should be able to produce the video when advised by counsel to do so.

If care is not taken, unfavorable results may follow in trying to defend the case. A failure to preserve may result in an instruction from the court to the jury that the video was unfavorable. Worse yet, sanctions against the party may also be available for destroying or failing to preserve evidence, including adverse judgment or exclusion of other helpful evidence. The best advice is to create a policy for video safekeeping and production, so to prevent inadvertent destruction or disclosure.


Conclusion

So, should you install cameras in your fleet? Taking a nod from those in the transportation industry, construction companies operating a fleet of vehicles or heavy equipment would do well to consider them. Of course, a prudent decision flows from a cost-benefit analysis. Start with the considerations outlined in this article and add in your own unique facts and circumstances to the equation to see if on-board cameras are the answer for your company. ■

Jeffrey Swann is a partner at PPGMR Law, a full-service law firm with offices in Little Rock and El Dorado. Jeff's practice is focused on civil litigation on behalf of PPGMR's oil and gas, construction, trucking, and manufacturing clients. Jeff is a native of Little Rock and a graduate of Catholic High School. He received his B.S. in Mechanical Engineering from the University of Mississippi and his J.D. from the Bowen School of Law.



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Advancement in engineering & surveying technology

11

by Jim W. Smith, PE, &
Jerrad Burns, CD
Sorrell-Smith Engineering

ADVANCES IN TECHNOLOGY HAVE MADE AN IMPACT IN ALMOST EVERY AREA OF HUMAN LIFE. THE FIELDS OF ENGINEERING AND SURVEYING HAVE FOLLOWED THOSE ADVANCES AT EVERY STEP IN THE PROCESS IN ORDER TO PROVIDE DATA AT INCREASED ACCURACY AND SPEED.

Improvements in the GPS constellations and the availability of multiple systems allow for accurate positioning at any time during the day. Networks of Continually Operating Reference System (CORS) data provided by various agencies increase the efficiency of data collection. With these improvements, the advancement of mobile, stationary and UAV LIDAR technology has revolutionized the surveying and data collection fields and the future is unlimited.

Evolution of Surveying

The history of surveying dates to ancient times, even in Biblical era. **Surveying is defined as the science and technique of determining the relative positions of points and or objects on, above or below the surface of the earth.** Various methods and equipment

have been used for surveying to accurately determine land boundaries and subdivide larger tracts of land into smaller parcels for potential development. During the early 20th century, surveying technology advanced at a steady rate, resulting in an improved ability to accurately map land yet provided insight into the possibilities that could be available with better technology.

In the late 1950s to early 1960s Global Positioning Systems were used in military defense systems known as GPS. GPS is the network that uses multiple satellites orbiting around earth to triangulate a position on Earth with coordinates. With the industrial boom and advances in space technology, engineering and surveying followed suit with the development of the computer. Since the 1960s, this particular devel-

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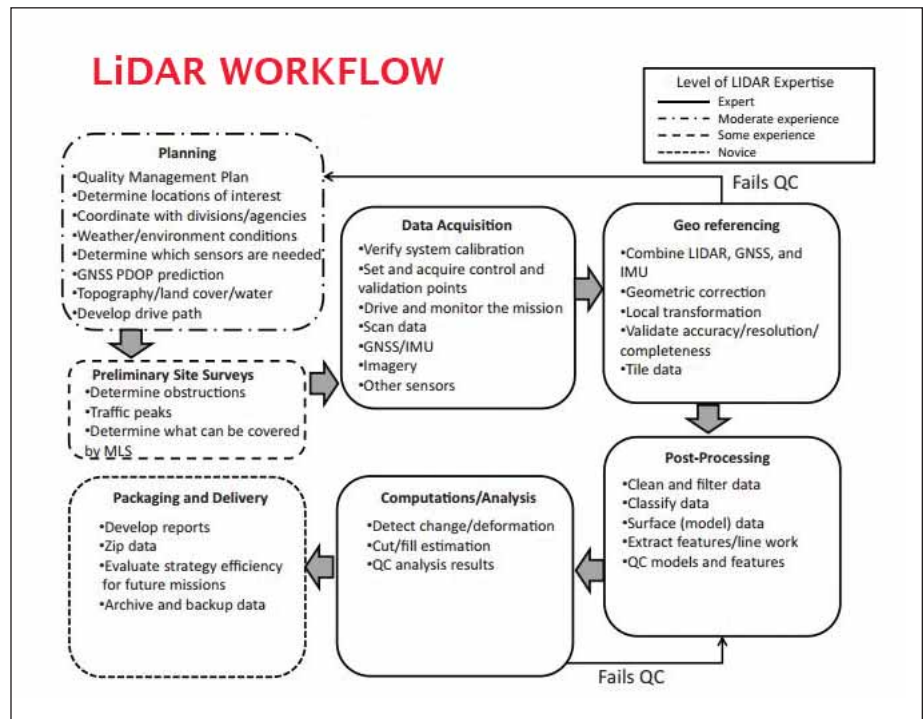
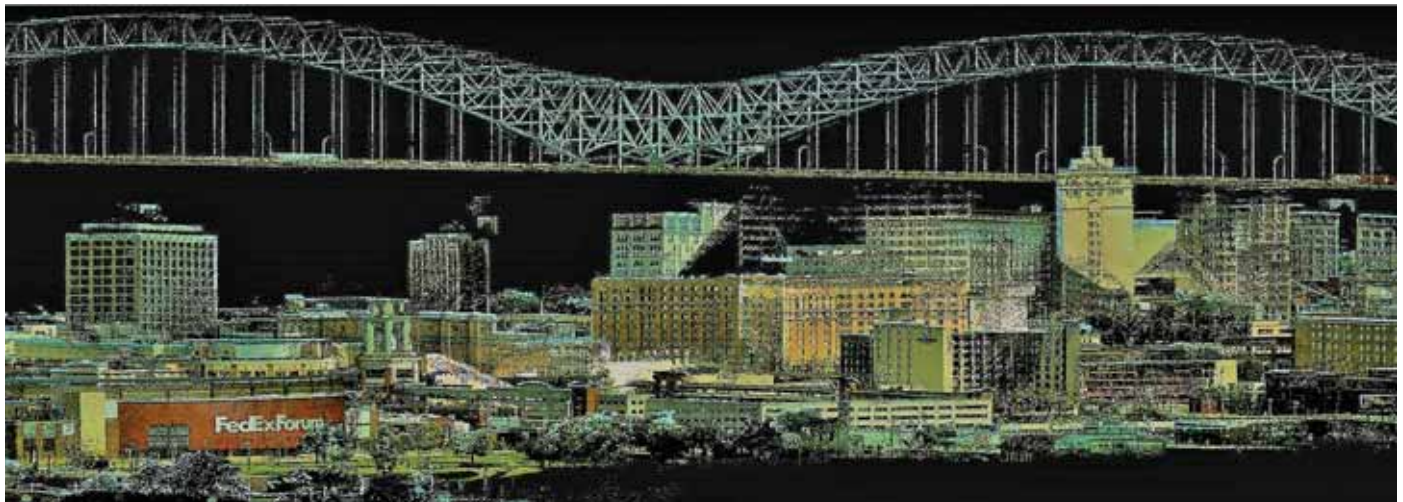
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opment has been utilized throughout the world to advance technology into many applications which impacted our country and the world in almost every aspect. When released for public use, the computer was a game changer to the markets of engineering and surveying. This technology improved the short range of EDM instruments and measuring tools, then combining them together to make "total stations" which became one of the most valued instruments used by surveyors. This made a significant impact on surveyors by reducing the amount of equipment while allowing mapping and layout with a click of a button.

In the early 1980s, surveying was redefined once again by evolving technology. The GPS was opened for civilian applications and uses. The Reagan Administration opened this service to the market utilizing its benefits of pin point coordinates on many resources. This era discovered Geographic Information Systems (GIS) that was developed in Ottawa, Canada and was used to record and map the land within the country of Canada. This tool was a program that ran on computers that built data bases to accurately map large areas of land. Surveyors can stream live information to the database and make corrections or add information for public use in timely manner.

In today's world of GPS and 3-D scanning, the early days with a chain and compass, and the alidades and plane ta-

Colorized LiDAR Data of downtown Memphis



bles might seem insignificant but these instruments and their dedicated surveyors played an invaluable role in the development of today's boundaries and the establishment of land ownership in the United States. Without them, the country's extensive infrastructure, resource management, and western settlement would not have been possible.

Future

While technology is changing daily, new uses in engineering and surveying are developing to correspond with the change. Engineering challenges and specific needs drive new developments in technology which further advance field survey operations and the cycle repeats itself again. Thus, creating software and equipment that is more intuitive and

hands free while becoming more convenient and precise. Operations that were extremely complicated, time consuming and required tedious calculations decades ago are now performed instantaneously with the click of one button with visual displays that project 3D details that were once only imagined or drawn on paper in two dimensions.

Uses

One of the advances in technology that Sorrell-Smith Engineering Consultants LLC has found to be most beneficial for both survey data collection and engineering information is from the LiDAR technology. Whether utilizing a mobile truck mounted LiDAR (Light Detection and Ranging) scanner or an aerial UAV LiDAR drone, the sensor captures the



LiDAR data is useful for original and final surveys of highways, rail lines, topography at mines and borrow sites, building and industrial sites, bridges and other structures for design, maintenance and as-built surveys.

surrounding environment at a rate of up to 700,000 pulses per second. The multiple rotating lasers cover the full 360° at a slight angle around the unit which the resulting data creates a 3D point cloud of the objects and surface with only minimal gaps in coverage. An Inertial Measurement Unit (IMU) processes data received from the GPS receiver to provide precise positioning and altitude for each point of LiDAR data. This point cloud data when processed provides data within State Plane Coordinates as well as vertical elevation all within acceptable tolerances for surveys.

This type of data has been found useful for original and final surveys of highways, rail lines, topography at mines and borrow sites, building and industrial sites, bridges and other structures for design, maintenance and as-built surveys.

QA/QC

From a data management point of view, the most difficult stages in the work flow are in the early stages due to raw data storage and processing of large volumes of point clouds. The post-processing step includes basic operations that are typically performed automatically and with limited user input or feedback. Of relevance to the management of large LiDAR datasets, are the operations of filtering and classification, because they generally apply to each individual data point. That is, each point can be assigned a classification or filter value. This contrasts with computations or analyses

West Memphis Airport - Colorized LiDAR Data that has RGB value plus X,Y,Z. Original scan data used for existing site conditions.

(e.g., extracting curb lines), which generally do not alter the fundamental point cloud information. Project workflows typically require use of several software packages, many of which are updated frequently. In general, easier-to-use software will have a higher initial cost in contrast to lower cost products which may have reduced functionality. The types and number of software packages needed depend on how much of the processing will be done in-house. Another important consideration is data interoperability between these packages and between software versions (not just for point clouds). In many cases, the geometry features may transfer effectively between packages, but attributes are lost. Finally, plug-ins can be obtained for many CAD packages to enable point cloud support directly within the CAD software, reducing the amount of training.

Time is Money

Technology such as the LiDAR and GPS work together to provide information with the highest accuracy in the shortest possible time. While this technology does not fit every project, it has developed such that a combination of the two technologies can typically be used for survey data collection to meet the needs and requirements for most any

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project. The time required to collect and process the LiDAR data has proven to be cost effective on large and medium size projects with completion time cut by 50 percent and in some cases, up to 75 percent. The additional data and photographs obtained during the LiDAR scan can often provide information from the site for the designers that prevent any return to the field to obtain missing data that might not have been obtained from a conventional survey. These return surveys are typically time consuming, non-productive and costly causing delays in design and survey productivity.

In order to meet the increasing demands of construction projects and engineering designs, as professionals we must embrace the new technology and seek out ways to utilize and manage this information to provide the most cost effective methods and best resources for our clients, owners and the public. ■

Sorrell-Smith Engineering Consultants LLC (2SEC) is a full-service engineering

design, planning and construction management company located in West Memphis, Arkansas. 2SEC was formed in 2015 from Sorrell Consulting Engineers which was founded by Dennis Sorrell in 1992. Mr. Sorrell before his passing had over 40 years of experience in civil engineering practice having formerly been a partner with Bond Consulting Engineers for 20 years. Prior to acquiring the business Jim W. Smith had 23 years of experience in various engineering roles with the Arkansas Highway and Transportation Department in addition to 13 years with APAC Tennessee as the Engineering / QC manager.

Presently, the firm has seven employees including one licensed engineer, two CADD technicians, one administrative assistant and two survey crews with experience in all aspects of civil engineering, design, surveying, land development, planning, construction survey layout and construction contract management. Sorrell-Smith Engineering Consultants possesses the capability to assist a community and owners with a proposed project from inception to completion on virtually any civil engineering or planned project. 2SEC is an Associate Member of the Arkansas AGC. You can learn more at www.2SECLLC.com.



Part of Sorrell – Smith Engineering Team from left: Jerrad Burns, Jim Smith and Charlie Patton.

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Who is listening to subcontractors?

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*by Cherise Lakeside
Specifier, Ankrom-Moisan
Architects*

THIS PAST FEBRUARY, FOR THE FIRST TIME, I ATTENDED THE WORLD OF CONCRETE IN LAS VEGAS. I WAS INVITED BY THE TAO GROUP FOR THEIR PRAXIS EVENT TO DO A PRESENTATION ON SPECS 101 FOR ANYONE WHO CARED TO ATTEND.

Tao Group is passionate about maintaining design intent and providing the best possible outcome for the Owner. I was thrilled to be asked to share some CSI contract document education with folks who traditionally do not get exposure to it. Like anyone in our industry, I have areas where I am particularly passionate. One of those areas is better interaction and education for our emerging professionals. Another, and the subject of this blog, is improving communication, coordination and collaboration on our projects. I will take any opportunity that I can get to share this education across disciplines. I am especially grateful now that I had this opportunity at World of Concrete.

I would venture to guess that I get out of my specifier cave a little more than some due to my rather aggressive involvement in CSI and ever increasing speaking engagements. This gives me the chance to talk to folks from a lot of disciplines which is invaluable. What I learned this week is that I need to get my hands dirty.

Like a lot of people who work strictly as a specifier, I don't have many opportunities to get out on the jobsites and talk to the people who are actually doing the work. There has been very little opportunity to get feedback from the people who are using and interpreting the specifications that I write. There has been almost no chance to see, first hand,

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how it all comes together. How it actually gets built. This has been a critical mistake and it changes today.

I have done this Specs 101 class a number of times. It is geared to provide some very general knowledge of specifications, contract documents, roles and responsibilities and risk. You can only cover so much in 1.5 hours so I try to lightly hit a lot of pertinent areas to hopefully spark my attendees to ask more questions and get further education in contract documents and project delivery.

I have presented this class to architects, contractors, engineers, product reps and manufacturers – in and outside of CSI. Not once has anyone told me that the information was not helpful. The attendees always walk away with some homework they intend to do because I said something they didn't know or didn't understand.

At World of Concrete my audience for this particular presentation was approximately 50 concrete subcontractors. With the exception of a scattering of subs among my other presentations, I don't typically see this group at CSI meetings or in my presentations. I was thrilled to have a chance to talk with them. I was thrilled not only because I want to know what I don't know, but I also had a chance to clear up misconceptions about specifications. I wanted to learn how it really goes down

once those documents leave my hands.

I started with a couple of questions:

- How many of you read the Division 3 (Concrete) specs? 2 hands went up.
- How many of you read the Division 9 (Finishes, specifically floor coverings) specs to know what is going on top of your slab when you are finished? 1 hand went up.
- How the hell do you know what to build? The answer "We look at the drawings, do what the Contractor says and build what we know. We are the craftsman here."
- Why don't you read the specs? Answer "They are never right and have conflicting requirements that can't be built or shouldn't be built in that particular application."

I also heard some very interesting stories about some of the challenges that subcontractors face on the jobsite when they find things that are wrong or can be done better. Houston, we have a problem. Damn if I hadn't just received a 2x4 smack in the head. How have I been missing this knowledgeable and valuable group in my CSI adventures! How have I not been getting this crucial feedback so that I can do a better job?

I also shared a few things with them:

- Not every spec that they receive is written by a trained spec writer. Many specs come from designers with no contract document education. Spec writing is much more than just putting the products in

Houston, we have a problem.

*How have I not
been getting
this crucial
feedback so that
I can do a
better job?*

the document and they needed to understand how to spot potential conflicts.

- The Drawings AND the Specifications are the Contract. You are legally bound to them, whether you read them or not. If you provide something different, you may end up paying for it.
- There is more to a spec than Division 3. You need to read ALL of the Division 01 Administrative Requirements and the specs for the other products that are going to touch your work (most importantly floor coverings).
- There are specified processes to fix the things that are wrong in the specs so you don't take on additional risk. Understanding those and knowing where to find them is key to protecting yourself and the project.

There seems to be what I call 'problem children' on projects. Those areas of the project that continually have coordination issues. Roofing is one of them. The building envelope is another. Hands down – concrete, concrete moisture and the later installation of floor coverings is probably at the top of the list. It drives me insane when I see a continuing problem that doesn't get fixed. What drives you crazy at work? That



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question always results in the areas we need to improve. This is one of those areas and change starts with me.

There is no way that I am taking on concrete issues in construction in this blog. I don't even pretend to be knowledgeable enough to do that. BUT I will tell you what I am going to do:

- I am going to get out on the job site more, talk to the folks doing the work and find out where my documents are falling down. I am going to learn what I need to learn.
- I am going to actively and aggressively pursue the subcontractors to get involved in CSI and bring this feedback to the table for all of the other disciplines. They are a voice that is not being heard.
- I am going to look for opportunities to speak to, work with and learn from the trades. They know better than anyone when it comes to what works and what doesn't. Knowledge exchange is crucial.
- I am going to look for opportunities to bring multiple trades whose work affects each other into the same room to find better ways of collaboration and increase understanding of each other and the

work they are asked to do.

- I am going to ask quality tradesmen to teach me.
- I am going to bring the subcontractors into the conversation.

We cannot promote positive, forward moving change if we don't step out of our comfortable little cave and do something different. It has to start somewhere and it always starts with shared knowledge. Today, I invite my CSI compatriots to do the same.

World of Concrete was an amazing experience that I didn't see coming. I now wish I would have stayed all week. I thank all of the subcontractors and tradesmen who took the time to share with me, show me things and let me play with the big toys. I have the utmost respect for the work that they do. I definitely hope to have the opportunity to attend next year and really get my hands dirty. I encourage anyone to go outside your industry and learn from others in the process.

Be the change you wish to see in this world! ■

Cherise Lakeside is a Specifier with Ankrom-Moisan Architects in Oregon. She has experience with many facets of the project team in the built environment. She

has worked in construction, MEP Engineering and largely for two architectural firms during her 30-year career in AEC. Cherise is the immediate Past President of the Portland Chapter of CSI and will begin her first term as a Director-at-Large on the Institute Board of Directors in July. She is particularly passionate about young professional development, improving project coordination and LetsFixConstruction.com. They call her the #CSIKraken. Follow along on Twitter @FixConstruction or contact Cherise at cherisel@ankrommoisan.com.



Learn more at www.letsfixconstruction.com, a website dedicated to providing positive, collaborative solutions to common issues in Architecture, Engineering and Construction. Submit your blog posts to Cherise to gain exposure bring your voice to the table.

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AGC GOLD CLUB is an elite organization of members who appreciate the value of the association's mission and want to contribute above and beyond the basic dues. These members are acknowledged with special badging, company listings and recognition.

In addition to seeing their company name at events and on mailings throughout the year, these members enjoy supporting Associated General Contractors in their community. 100% of the proceeds of the Gold Club stay in Arkansas to fund the local chapter, programs and regional events.

To join now for 2017, complete the form below. To learn more about the **AGC GOLD CLUB**, contact:

Beth Franks

501.375.4436

bfranks@agcar.net

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Annual GOLD CLUB membership dues are currently \$500. AGC Arkansas membership is a prerequisite. Membership is automatically renewed and billed annually until notice for termination is received. Membership dues are collected by calendar year. For more billing information contact the AGC office at 501.375.4435.

Giving Back

Who doesn't love a little good news? We wanted to take a moment to both highlight and thank our members for giving back to the community. Take a look at some of the great things happening out there.

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GarverGives commits to middle school STEM programs

With an aim to support STEM organizations throughout its 10-state footprint, Garver launched in 2015 GarverGives, its employee-led corporate giving program. It has contributed more than \$137,000 to 150 organizations over its first two years, while creating a positive effect on its community, clients, and employees. Garver employees volunteered more than 400 hours in 2016, when it was awarded the Smart Corporate Giving Award by the Arkansas Community Foundation.

The effect of GarverGives has been felt the strongest in central Arkansas, the location of Garver's corporate offices and the home base for 160 of its employees. There, Garver chose to support Bethel, Bryant, and Beebe middle schools through financial donations that expanded and enhanced opportunities



available in the schools' STEM classes.

A 3D printer was purchased by GarverGives at Bethel, along with supplies allowing students to print creations made in 3D CAD software. It funded the robotics team at Bryant, spoke at their

classes and bought supplies needed for the team to compete in the VEX World Championships, and Project Lead the Way's Project Launch program added engineering technology to Beebe's sixth-grade curriculum.

Rogers Group helps restore park after storm

Earlier this year, a storm with winds in excess of 70 mph ravaged Clinton, Ark. The Clinton City Park was severely damaged, causing community use of the park and sports to come to a halt. The Rogers Group quickly reached out to the city and volunteered to clean-up and fix the park. Remarkably, a large team of Rogers

Group employees from all over Central Arkansas were able to repair the park in one day. Grateful Clinton residents, including senior citizens, children, the mayor and a city councilwoman, stopped by to share their appreciation.

"One of the goals of Rogers Group is to enrich the communities where we

live and work," said Equipment Operator, Steve Bradley. "As a citizen of Clinton, I want to express my sincere appreciation to Rogers Group and their employees for being willing to help my community. As a Rogers Group employee, it makes me extremely proud to work for an organization that is so dedicated to helping others."



Baldwin & Shell Employees Raise \$1357 for No Kid Hungry Arkansas

Baldwin & Shell Division President Bobby Gosser, Jr. presented a check, on behalf of Baldwin & Shell employees, for \$1357 to Arkansas Hunger Alliance Executive Director Kathy Webb and No Kid Hungry Arkansas Campaign Director Patty Barker. The money was raised through Baldwin & Shell's Jeans for a Cause program launched in August of 2016 and will benefit Arkansas children who face food insecurity. Did you know that more Arkansas children struggle with hunger than in any other U.S. state? Baldwin & Shell's Jeans for a Cause program will continue throughout 2017 with the goal of doubling our contribution. To learn more about childhood hunger go to: <http://ar.nokidhungry.org/>



23

JBU CM Students Build Skeet Field for new Club

With the generous help of a JBU alumnus and students from the JBU CM Department, the JBU Shooting Sports

Club has a new skeet field near campus where they can practice their shotgun skills. The JBU Shooting Sports Club



started in 2015 when several students who are firearms enthusiasts decided to organize for recreational and competitive shooting. One of their initial difficulties was finding shooting venues close enough to campus to allow frequent and inexpensive practice. Fortunately, this past year a JBU Alumnus offered to donate equipment and materials to allow the construction of a skeet field for the club. Several Construction Management students were then able to build skeet houses for the field. This will be a great boost to the Shooting Sports Club and will allow its shotgun shooters to prepare for the Scholastic Clay Target Program National Competition in October 2017.

Riggs CAT Employees Share It Forward

Riggs CAT has a Share It Forward Foundation where all employees can donate 1/2 of a percent of their hourly wages to the foundation. Each branch has a SIF committee and picks local charities to donate their funds to. Part of those funds this March went to hosting three Riggs CAT Junior days in Springdale, Fort Smith, and Little Rock, Ark.

The kids they hosted were in temporary or emergency shelter situations and enjoyed a full day of operating backhoes, digging for parts in pallets of packing peanuts, competing to build the tallest

tower out of spaghetti, tape, string, and a marshmallow, and eating tons of pizza.

Riggs CAT matches 100 percent of the employee donations to the SIF. Employees say they are both "lucky and proud to be able to give these kids a chance to be kids, to help out fellow employees in times of hardship, to award scholarships, and give back to their communities."



continued on page 24

Gigerich Electrical Makes Giving Back a Priority

Gigerich Electrical, Inc. (GEI) and its employees have made giving back to area communities and those in need a top priority over the years.

In 2007, GEI started hosting an annual fundraiser in the form of a golf tournament to further invest in the youth of Garland County. Each year, all proceeds

are donated to the Garland County 4H Program. Since the initial golf tournament in 2007, GEI has donated almost \$100,000 to the Garland County 4H. GEI's business partnerships and various relationships across Arkansas have been key to this fundraiser's success.

In 2009, GEI employees established

a benefit fund (which is referred to as the Christmas Fund) to help people in need. Many GEI employees voluntarily donate various portions of their income into this Christmas Fund. To date, this fund has provided: close to \$40,000 in food and gifts to 63 different families (164 children) in Garland and Hot Spring counties; over \$10,000 to area churches; approximately \$3,000 to area daycares; over \$4,200 for various disaster relief needs here in Arkansas as well as our neighboring states; over \$3,500 to area schools in support of FFA and Trap Shooting Teams; and over \$8,000 to other worthy causes such as supporting our nation's troops at Christmas.

Giving back to the community and helping others in need has been a priority for GEI long before there was a golf tournament or a "Christmas Fund". However, the addition of these tools eight and ten years ago (respectively) have provided platforms for GEI and its employees to grow their contributions to the community exponentially.



Risk Services Employee Steps Up as Big Brother

Ryan McClafferty, Risk Consultant with Risk Services of Arkansas, attended a Big Brothers Big Sisters of Central Arkansas fundraiser three years ago that changed his life. He felt compelled to make a bigger difference by not writing a check. During the interview process with the BBBS, he learned that the shortage of mentors creates a waiting list years long with many children going unmatched. He knew he could make a difference with one person. Ryan's little brother, Tyler, occasionally spends the workday with him at Risk Services, but like any kid his age prefers bowling, hiking, fishing, and Minecraft. AGC Members have a long history of generosity and Ryan encourag-

es each of us to make an investment into a specific relationship as well. Feel free to reach out to Ryan (Ryan.McClafferty@

insurica.com) or BBBS of Central Arkansas (501.374.6661) if you are interested in learning more.



Clean Line Energy Funds Scholarships

Graduating Arkansas high school students in the communities where the Plains & Eastern Clean Line transmission project will be located are benefiting from new scholarship funds. In 2016, Clean Line Energy contributed nearly \$15,000 to high school scholarship funds across the state. Students awarded these scholarships are using the funds to realize their post-secondary education goals at the college or technical school of their choice in the upcoming academic year.

Clean Line will provide over \$140 million over the first 40 years of the project's operation to school districts where the transmission line is located.



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We want to hear from you!

What are you doing to invest in the health and morale of your employees? How are you giving back to the community? We'd love to share your story. Send us a note at bfranks@agcar.net.

The advertisement is divided into three main sections. The top section has a dark, rocky background with the 'GMO' logo in white and yellow. Below the logo, the text 'ROCK-SOLID RESOURCES. REAL-WORLD RESULTS.' is written in large, bold, white, distressed capital letters. The middle section has a solid blue background with white text that reads: 'Granite Mountain Quarries is Central Arkansas' premier crushed-stone provider, delivering superior materials and service for more than 40 years. Count on our team for your next project.' Below this, in smaller yellow and white text, is the contact information: 'CONTACT Al Nicks, Sales: 501-490-1535 or al.nicks@gmqrock.com'. The bottom section is a photograph showing a worker in a yellow hard hat and green shirt standing on a metal walkway next to a conveyor belt that is transporting large, grey crushed stones. In the background, more of the quarry facility is visible.

GMO

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Construction Apps for 2017

*By Joe Morgan
Safety and Training Manager,
AGC Arkansas*

The construction industry is becoming more mobile, and with that comes the need for a growing app industry. A survey by construction apps advisory firm "Software Advice" recently found that 50 percent of construction companies are still using manual methods to calculate take-off, prepare bids, and manage projects. The proper utilization of the right apps can make for faster, more accurate bids, cut down on rework, save time, which in return means beating those very important deadlines. In all, apps can streamline the already extensive construction process, creating a more efficient, and safer place to work. New apps are constantly coming out, and below are a few that I have researched, and reviewed for 2017.



Fieldlens:

The flood of disorganized communication causes confusion, mistakes and re-work. Connect everyone in real-time. Now you can address issues before they become problems. The Fieldlens team has worked on construction projects large and small. Ditch your notepad, and just walk and post. Real field data will result in better decisions and more efficient work flow.



Fieldwire:

Fieldwire connects your entire field team, from the project manager all the way down to each specialty contractor's foreman, on one construction management platform. This app makes it effortless for anyone to view their drawings, schedule work and track the punch list while they are in the field.



PlanGrid:

PlanGrid can be used to reduce repeated trips to the trailer, minimize rework, and find answers faster through instant collaboration. Keep everyone on the current set and manage all your construction documents without relying on paper. Instantly share plans, markups, photos and reports with your entire project team from desktop or mobile.



Autodesk (Suite):

Autodesk's suite of apps contains everything from BIM to the sketchbook app. One of its newest apps, Site Scan, is an aerial analytics platform designed to survey, scan and inspect commercial worksites by way of a 3DR drone.



iAuditor:

The app by SafetyCulture allows users to build checklists, conduct inspections and file reports from your Apple, Android or windows devices. You can standardize your inspection process and review performance with various teams, locations, templates and more – even when you're offline.



FallSafety Pro:

"Peace of mind for just 23 cents per day." Available for both Apple and Android devices, the app detects falls by using your cellphone's built-in accelerometer. If the app detects a fall, an alarm alerts your emergency contacts by email, text and voice message while providing your GPS coordinates.



NIOSH SLM (Sound Level Meter):

Apple Only. This app provides a readout of the sound levels using the built-in microphone and reports the instantaneous sound level in A, C or Z weighted decibels. The app also contains some basic information about noise and hearing loss prevention. In addition, the app allows the user to save and share measurement data with others using the device communication and media features.



SDS Mobile:

The best free way to manage your safety data sheets. Search and view an unlimited number of SDS's giving you the ability to respond in emergency situations. Quickly gain instant insight into chemicals and products. Create your own online binder, while having the ability to forward SDS's by fax, e-mail or text message.



Waze:

A navigation app, powered by users of the app. Waze's crowd-sourced alerts come from real drivers, not algorithms, delivering info you won't see anywhere else to keep your commute flowing. The friendly interface and convenient detour routing really help and, with its social network integration, make road trips safer and more efficient.



Duet Display:

Duet is a very simple app to help with productivity and multitasking. Duet simply turns your iPad into a second screen for your PC or Mac. Simply plug in the lightning cord from your PC to your iPad and launch the duet app to add a second screen.

Having apps like these are great, but having them in the palm of your hand makes the ease of using apps much more efficient. Whether an iPad or Android device, having a tablet can be one of your most important tools on the job-site.

Tests have been done utilizing tablets on construction sites. These tests revealed that the return on initial investment was realized within 60 days. During this timeframe, users realized an immediate efficiency gain compared to peers not using tablets. An example of a few of these efficiencies identified and gained are listed below:

- Travel time being greatly reduced due to web conferencing capabilities and instantaneous access to to email.
- Time spent in the office performing administrative tasks was reduced because tablet users performed those tasks in the field.
- The amount of paper and office supplies used was reduced as forms, reports, and documents were transitioned to digital forms.

Construction professionals are constantly on the go and tablet devices are becoming an essential work tool. Organizations that incorporate tablets into their work practices can realize cost savings and increased performance almost instantly.

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What's Next?

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June 23	Lean Courses 6 & 7
June 29-30/ July 13-14	OHSA 30 Course
July 21	Midyear Golf Tournament and Dinner
July 22	Midyear Board Retreat
Aug 15 & 16	FREE Safety Training: Focus Four Hazards in Construction

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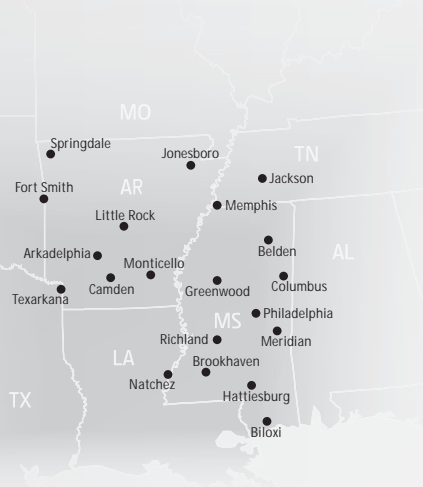
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Comings & Goings

Job Changes

Baldwin & Shell Construction Company announces the appointment of **Tori Bogner** as director of business development based out of Northwest Arkansas. Bogner holds two degrees from the University of Arkansas— a Bachelor of Arts in Communication from the Fulbright College and a Master of Education in Higher Education. They also welcome the addition of **Bailey Clark**, assistant controller, and **Joey Cunningham**, project superintendent, to the firm's growing team of dedicated professionals. Bailey brings ten years of accounting experience to her position as assistant controller at the Little Rock headquarters. Joey joins the Construction Services team as a superintendent with 14 years of commercial and residential construction experience. Cunningham specializes in tenant finish-out construction. Before joining Baldwin & Shell, Cunningham worked for CBM Construction and managed his own construction company, C3 Construction.

has more than 30 years of experience handling contract bonds for contractors. Pam is very knowledgeable in bond forms and requirements which keeps the process running without delays. Pam is very well known in the surety business and is highly respected. **Carrie Harper Smith** has more than 15 years of experience in working with insurance issues that are important to our customers.

Baldwin & Shell announces the addition of **Adam Cunningham**, Project Manager, and **Maggie Estes**, Project Coordinator, to the firm's growing Construction Services Division. Adam offers a solid 17 years of construction experience in various positions including superintendent, estimator, project manager and vice president. He holds an Associate of Arts degree with honors with an emphasis in general business from Pulaski Technical College and also studied industrial engineering at the University of Arkansas. Maggie brings seven years of construction management experience to her Project Coordinator position within the firm's Construction Services Division. Estes holds a B.S. degree in Architectural Studies from the prestigious Fay Jones School of Architecture + Design at the University of Arkansas at Fayetteville, where she was a J. Yandell and Mary Pipkin Johnson Memorial Scholarship recipient.

Baldwin & Shell Construction Company is also proud to welcome **Laura McCabe**, who will lead the company's marketing efforts as Creative and Marketing Director. McCabe is a highly-decorated agency veteran with additional experience in nonprofit development and K-12 communications



Arnett



Clark



A. Cunningham



J. Cunningham

Crain Concrete Construction, LLC is pleased to announce the arrival of our newest team member **Zane Garrett**. Zane will be joining the team as our Head Estimator/Head Project Manager.

Sterling Risk Advisors is proud to announce three new members of their team. **Grant Huddleston** has more than 10 years of experience in underwriting and helping to place their insurance program with the most competitive company along with being sure they have the right coverages for the exposures. Grant also serves on the Advisory Counsel for Accident Fund Insurance Company. **Pam Hays**



Estes



Garrett



Hays



Huddleston



Loyd



McCabe



Moody



Pohlner



Smith

and public relations. She has received award recognition at the local, regional, national and international level, and her work has been featured in national publications including Creativity magazine. McCabe is a graduate of Wellesley College in Massachusetts and holds a graduate certificate in nonprofit management from the University of Arkansas at Little Rock.

McGeorge Contracting Company is pleased to announce two new Hot Springs Hwy 70 Project Foremen, **Howard Arnett** with more than 30 years of supervisory and construction experience and **Eric Moody** with more than 15 years of construction and mining experience. Also, **Rodney Loyd** has been promoted to Key Operator.

Company News

Congratulations to **Karen Garrett**, of **Hudson, Cisne & Co.**, on her appointment as a board member for Home BancShares. Karen is also the first woman director.

AGC would like to congratulate the following members for making Arkansas Business' 40 Under 40 list: Nick Copas, Baldwin & Shell Construction Company; Jamie Jones, Friday Eldredge & Clark LLP; Jake Nabholz, Nabholz Construction Corporation and David Roberts, Advanced Cabling Systems.

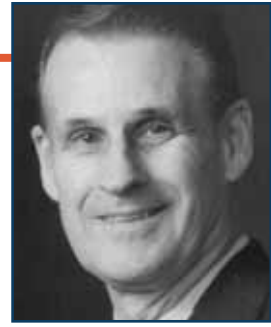
Bob Shell Retires

Robert "Bob" Shell has retired as Chairman of the Board of **Baldwin & Shell Construction Company** and will now serve as Chairman Emeritus. In 1950, Shell joined The Baldwin Company for a job scheduled to last nine months and ending up staying 67 years. He was named the President and Chief Executive Officer in 1983 following the death of Baldwin Company co-founder **Werner Knoop** at which time the company name changed to Baldwin & Shell. Under Shell's leadership, the firm's sales volume went from \$19 million in 1984 to over \$211 million in 2010, when Shell was named Chairman of the Board and **Scott Copas** became President and CEO.

"Bob changed the landscape in the construction industry in Arkansas in the late 1950s," said President/CEO **Scott Copas**. "He was a leader in the shift from straight bid jobs to negotiated jobs based on the contractor qualifications, which is now the industry standard." Over the years, Shell has been honored many times for both his professional achievements and contributions to the community. He is one of five charter members of the Arkansas Construction Hall of Fame, a former president of Arkansas Associated General Contractors of America, a national lifetime director of Associated General Contractors of America and Arkansas Business Executive of the Year. He received the Blind Vision Award from World Services of the Blind, the Jerry Davis Memorial Award from the American Heart Association and the Alzheimer Arkansas Advocate of the Year.

Shell currently serves as a board member for Baptist Health Foundation, Fellowship of Christian Athletes, Alzheimer's Arkansas, Associated General Contractors of America, Arkansas Associated General Contractors, President's Advisory Council for Arkansas State University, Advisory Board of Centennial Bank, and Fifty for the Future.

AGC Arkansas would like to thank Bob for his long-time service to our association and congratulate him on an outstanding career.



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