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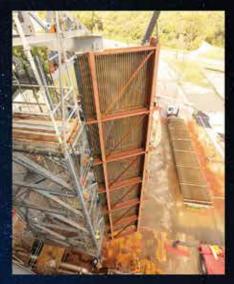
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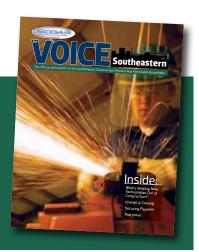
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A recent survey by AGC revealed that 70 percent of construction firms expressed concern that it will be difficult to find hourly craft workers over the next year. This issue's feature articles discuss ideas on how industry can combat this problem.

Photo credit: Fluor





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From the President



Boyd Worsham President **SCOAR**

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t will be years until we know the full effect of hurricanes Harvey and Irma to the south coast but early numbers are staggering. Days after Irma tore through Florida (and as I write this message), 2.5 million utility customers are still without power. In Texas, Harvey wreaked havoc on nearly 140,000 homes, and Texas Governor, Greg Abbott, estimates that damage will cost the state around \$180 billion; one of the costliest natural disasters in U.S. history.

Yet, amidst all the chaos, there are many stories of neighbors helping neighbors, and even strangers helping strangers. This is the spirit that will drive the rebuilding efforts.

I'm proud to say that SCOAR is an organization driven by members who share a similar drive, in this case, for innovation and to be better builders. Our members range from industrial owners to EPC companies, engineers to general and specialty contractors. All have joined our organization to be part of a collective group of individuals and companies that want to improve how construction is planned, managed, accounted for, regulated and executed.

This is a massive undertaking. It's no secret that the construction industry lags behind other sectors in terms of its productivity. I believe banding together, with like-minded individuals, will yield results, especially with our organization acting as a conduit of change. SCOAR's format enables representatives from both friendly and competitive companies to come together in a transparent environment to share ideas and benchmark

The growth in our membership this past year demonstrates that there is a real desire by industry in the southeast to work together for the betterment of our projects. We collaborate on everything, from safety to lean project delivery to labor force needs, and we believe that education is a major part of the equation. This is why SCOAR hosts several workshops throughout the year, giving attendees great information on industry topics such as new and emerging construction technologies, contract concerns, safety best practices and economic outlook.

SCOAR and our members also demonstrate a commitment to the future of the industry via our scholarship program, which resulted in over \$60,000 awarded to the next generation of construction this past spring. Each year we raise money via several means, including a golf tournament fundraiser and direct contributions from our members. The funds are then awarded to deserving students studying various industry-related career choices. Please get involved in this worthy endeavor; please contact our office to learn how you can support our industry's future.

Finally, if you are not already familiar with SCOAR and what we do, I would like to encourage you to reach out to myself, anyone on our board, or to Randy Bakel, Executive Director. Ask questions and learn what we are all

I believe there is strength in numbers and know that the strength of our organization comes from the quantity and quality of our membership base. Join us as we improve ourselves, our businesses, our industry and our future workforce.

Until next time, be safe.

Boyd Worsham



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From the **Executive Director**



Randy Bakel **Executive Director** SCOAR

reetings, once again. I feel fortunate to report that our association's office and my home in south Florida suffered only minor damage in spite of Hurricane Irma roaring right over top of both. I would like to wish everyone else in our industry community the best of luck as clean up continues and rebuilding begins.

I'm happy to report that SCOAR participation has hit an all-time high... again! Here are some of the reasons why I believe we are growing.

SCOAR focuses on workforce development! SCOAR members have decided that the association is going to increase its focus on the workforce shortages facing the industry. Efforts are underway to connect people to career training and to connect training graduates to company jobs. If this is important to you, come help us help our industry.

SCOAR members supported \$61,000 in scholarships! At the SCOAR Safety/Scholarship Awards Dinner in May, over \$60,000 in scholarship funds were presented. Construction safety students received \$10,000, construction engineering/management students received \$18,000, and skilled trades students took home the most, with \$33,000 in scholarships presented. One hundred and fortysix SCOAR company members and guests participated in the Golf/Fishing Tourney, which helped to raise these important scholarship monies.

SCOAR presented TOPS safety awards! SCOAR sets a threshold of safety excellence and then awards

SCOAR member companies whose submitted project safety records and programs not only exceed the threshold, but surpass all the others who have submitted. These companies are at the TOP of the industry and are therefore deserving of recognition—a TOPS AWARD!

SCOAR Owners' Forum grows! Our owner member group continues to be strong. We have met on topics such as, "QA/QC Contractor Programs" to "Solar and Coal to Gas Conversion Projects." The forum style provides owner members the opportunity to meet as a group to share and learn from each other.

SCOAR's program meetings/current and relevant! Program meeting agendas are developed based on the input and suggestions from our membership. The informality of the meetings allows members to interact and learn from each other.

SCOAR members enjoy their SCOAR experiences! Beyond our meetings, we also organize a variety of ways for our members to come together in an informal atmosphere, have discussions and continue to build relationships, such as socials, breaks, discussion groups, tours, informal golf, etc.

Come experience a SCOAR event! If you aren't a SCOAR member and if you are involved in the industrial engineering and construction business in the Southeast (or want to be), you should consider participating with us and improving your business and the industry.

Randy Bakel

What's Keeping New Technologies **Out of Construction?**

By Steve Jones, Dodge Data & Analytics

echnology is driving transformative advances in all aspects of modern American life. In business, most major industries in the United States, such as manufacturing, health care and financial services, have been expanding their adoption and use of technologies for decades, with positive impacts on speed, efficiency, productivity and safety, and reliability of quality, cost and delivery. In these industries, advanced technology is a must-have to survive and compete effectively.

Construction lags

Yet, a 2016 global report from KPMG called Building a Technology Advantage labels about two-thirds of owners and contractors in the Americas as either "Industry following" or "Behind the curve" for technology adoption, with just 10 percent being "Cutting-edge visionary" and 25 percent who are "Industry leaders."

Why does design and construction, one of the largest industries on earth, still lag the others in its acceptance of new technologies, even if they are proven to save time and money, and bring more certainty, control and predictability to the process of creating constructed assets?

The need for improvement is well-established

There is no question that construction performance and project delivery can be greatly improved. A study

conducted by Dodge Data & Analytics for the Lean Construction Institute establishes that 61 percent of owners' typical building projects are delivered later than expected, and 49 percent exceed the authorized budget. This unreliability of performance would not be tolerated in any other major industry.

Technology has been proven effective

Meanwhile, numerous research studies by Dodge Data & Analytics and others provide compelling evidence of the positive impact technologies, such as Building Information Modeling (BIM) are providing to project teams all over the world.

Here are some examples, published in Measuring the Impact of BIM on Complex Projects SmartMarket Report, released in 2015 by Dodge:

- Asked about their complex building projects (e.g. healthcare, labs, highrise buildings, data centers, etc.) where BIM was used, 85 percent of the U.S. owners, engineers, architects and contractors surveyed cite a reduction in final construction cost.
 - » Among those, over half (55 percent) are seeing at least a five percent cost reduction.
 - » One in 10 of these respondents claim more than a 10 percent cost decrease.
- Schedule is even more positively impacted by BIM, with 88 percent reporting accelerated completion.
 - » Among those, nearly two thirds (68 percent) cite five percent or better schedule compression.

- » And almost a quarter (23 percent) of those are enjoying above 10 percent.
- Eighty-seven percent of the owners and contractors reported increased labor productivity.
 - » Among those, 20 percent cite a significant productivity increase (more than 25 percent).
 - » Most (67 percent) of them are still seeing less than a 25 percent increase, but that is likely to increase with experience.

Impediments to change

If technology is so effective at improving the project delivery process, why isn't it being more widely adopted? One obstacle derives from the fragmented, project-oriented nature of the construction industry. Unless you are working on a project where a given technology is being successfully deployed, you are unlikely to be exposed to its value, and there is no government agency charged with driving innovation for building.

Another factor is risk avoidance. Creating constructed assets is inherently risky, and most companies are reluctant to add to that risk with promising but unproven tools or processes. It's been said about technology adoption in construction that "Everyone wants to be first to be third"—the first company suffers the impact of trying something new, and the second invests the time and effort to make it work. Then everyone wants to get on board.

But, until that happens, companies habitually default to familiar approaches, even though the results are consistently sub-optimal.

Approaches to progress

The path forward requires a threepronged strategy that can be called the Carrot, the Stick and the Tambou-

The Carrot: Everyone wants to improve project delivery performance, and technology can do it. But to attract risk-averse users, technology vendors must shift their message from the features of their tools to the benefits they provide, described in terms that are meaningful to users.

That's where research from Dodge Data & Analytics and others can be effectively leveraged to quantify improvements against relevant metrics. Industry organizations can also play a vital role through education, task forces that identify the most effective solutions for their members, and award programs celebrating successful implementations.

The Stick: The United Kingdom has a comprehensive technology mandate program for government-funded projects, but the U.S. government, outside of a few agencies, is not demanding usage. This places the responsibility on individual owners and contractors to require technology on their projects.

In a recent Dodge study, 78 percent of non-users said they haven't adopted BIM yet simply because no one has asked them to. Competitive pressure to comply with customer requirements will be an effective motivator.

The Tambourine: Actively spreading the word about technology successes helps to bridge the information exchange gap perpetuated by our industry's fragmentation. When you experience success, become an evangelist among your peers and in your industry organizations. Offer to make presentations to government agencies and at regional organization chapter events to inform, encourage and inspire others to follow your example, and ultimately blaze their own path that is most relevant to their business.

Just do it

As an industry, we're on a noble quest to drive technology adoption that will improve project delivery performance. And remember, all change meets resistance, but in the words of retired General Eric Shinseki, "If you don't like change, you'll like irrelevance even less."

Steve Jones is Senior Director of Industry Insights for Dodge Data & Analytics. He oversees DD&A's thought leadership, market research and SmartMarket Report initiatives.

Sources

- Building a Technology Advantage, by KPMG, can be downloaded at www.kpmg.com. Search "Building a Technology Advantage."
- Measuring the Impact of BIM on Complex Projects SmartMarket Report, by Dodge Research & Analytics, can be accessed at www. construction.com/toolkit/reports/ measuring-impact-bim-complexbuildings.



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Change is Coming

By NCCER

hen we were young, we built entire cities and neighborhoods from Legos, Lincoln Logs and building blocks. In those moments of pure innovation, nothing was as impressive as what we could build by hand on the living room floor.

Fast forward 30 years and that same creative drive could have led to a successful career in the construction industry. But, along the way, something changed. Somewhere between childhood and adulthood, we were taught that enrolling in the right college, choosing a safe major and landing the perfect internship are the stepping stones on the one and only path to success. To pursue any other avenue, including the commonly referred to "middle skill" careers in the construction industry, would evoke great skepticism and concern from those around us.

Unfortunately, most of us swapped our blocks for books and ventured down the cubicle-lined path. Fortunately, the construction industry is proof that not all of us have to.

There are still careers where builders thrive and the tendency to tinker is encouraged; however, these positions aren't regarded as highly as "office jobs" by individuals just entering the workforce. With the continued push for a college education and the media's undesirable portrayal of construction as a middle skill industry, labor shortages are higher now than ever. According to the Construction Labor Market Analyzer, by 2021 we are expected to have a deficit of over 1.5 million craft professionals



Interestingly enough, when you think about the benefits our industry offers, like the ability to travel the world and advance professionally with healthy paychecks along the way, it is surprising that there are so many unfilled positions. As professionals, we know the value of a career in the industry, and while it is easy to brush aside the subpar "middle" labeling, what we often pay little attention to is the effect this portrayal has on our industry's growth and image.

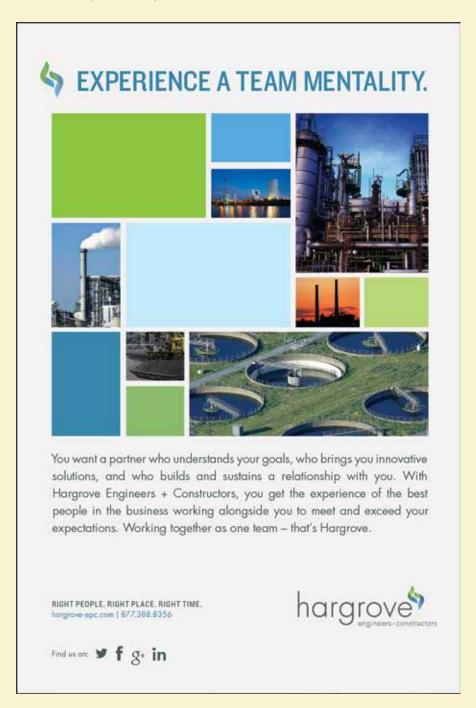
Innocently-misguided terms, such as middle skills, communicate that the everyday construction worker is merely a replaceable resource or commodity. What it fails to represent, is the multiple training levels, certifications and credentials that outline the grit and determination on a craft professional's resume.

For example, we know that in a single workday, a pipefitter will calculate as many, if not more, mathematical equations to ensure the accuracy of every fit and angle, than an engineer. When we pass by bridges, schools, power plants and stores, we don't disregard them as just another building built by just another group of men and women. Instead, we acknowledge and applaud the skill and knowledge of every craft professional responsible for its sturdy and safe structure.

At the end of the day, what truly differentiates a craft professional from all others is skill. However, it's more than knowing how to hammer a nail and dig a ditch. Manpower-Group's 2016-2017 Talent Shortage Survey reported that employers are struggling to fill positions due to potential employees having a lack of technical skills, soft skills and limited experience. That's where career and technical education (CTE) comes in.

Across the country, CTE programs are committed to this important inclusion of hands-on training that forges a connection between textbook material and real-world application. Studies continue to show that students are benefitting greatly from the enrollment in CTE programs and

Forget making copies and filing expense reports; the invaluable skill set gained from craft training qualifies you to one day build our society's infrastructure.



ultimately, that this style of training is redefining education and the idea of postsecondary success. According to the Association for Career & Technical Training (ACTE), CTE prepares students to be both collegeand career-ready by providing a wellrounded mix of academic, employability and technical skills.

Our industry is one of few capable of tailoring skill and competency to the exact job description. While summer internships sprinkled between college semesters are encouraged to gain experience, hands-on construction training is redefining career readiness. Forget making copies and filing expense reports; the invaluable skill set gained from craft training qualifies you to one day build our society's infrastructure. How much more realworld can you get than that?

With all of the terms in circulation, it's easy to lose sight of what's really important in the industry. Think back to the very beginning when you stepped foot on a construction site for the first time. What made you stand out? Was it your refined skill set or the in-depth knowledge of your specific craft? Most likely, it was both. Building a career-ready skill set is about more than showing up with a hard hat and steel-toed boots and that's the truth we must start communicating to the general public.

In 2011, NCCER made a conscious commitment to utilize the term "craft professionals" to truly speak to the contributions of our workforce and since then, we have seen its adoption across the country. If one organization has the power to initiate change, imagine what a language makeover backed by the entire industry could accomplish.

While credentials earned are proof alone that the industry is much more than "middle skills," it's time to start sharing our confidence in the crafts with society.

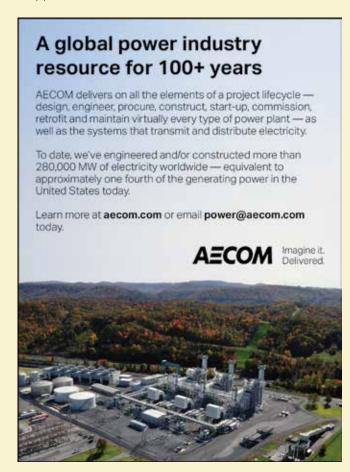
NCCER is a not-for-profit 501(c) (3) education foundation created by the construction industry to develop standardized curriculum with portable credentials and to help address the skilled construction workforce shortage. NCCER is recognized by the industry as the training, assessment, certification and career development standard for the construction and maintenance craft professional. For more information, visit www.nccer.org or contact NCCER customer service at 888-622-3720.

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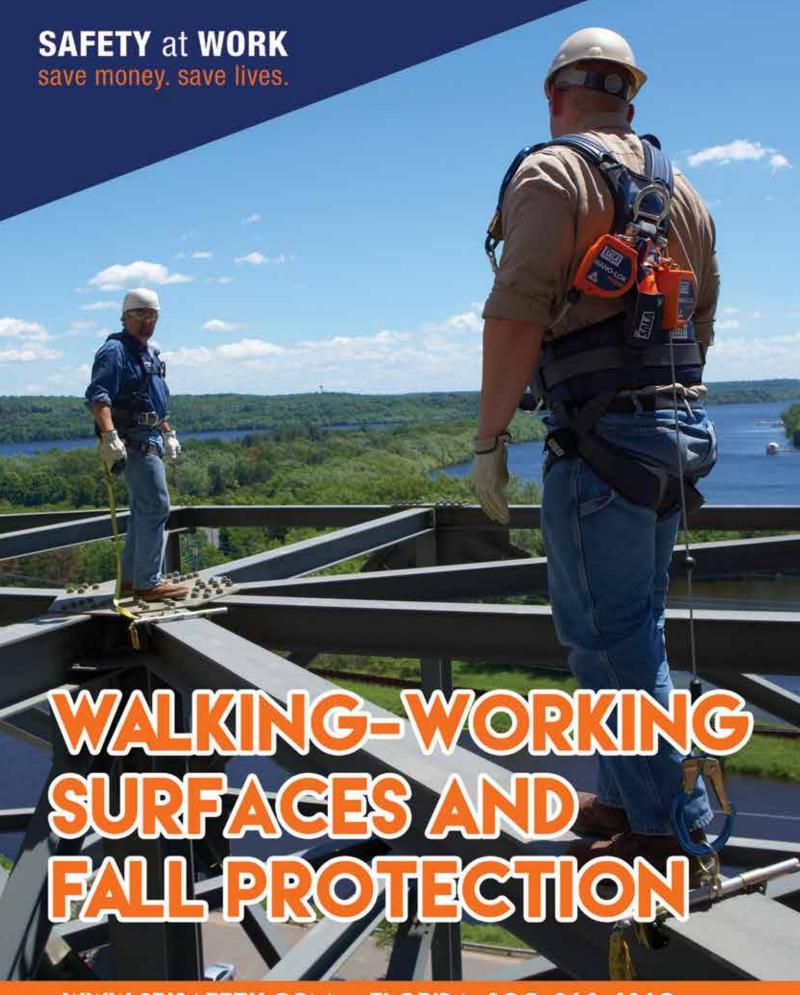


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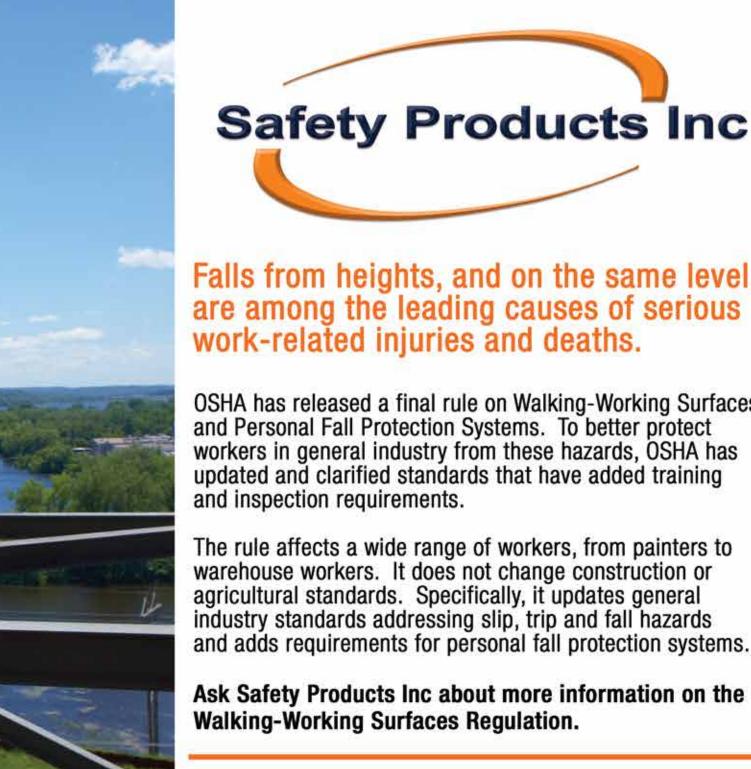
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By Lee Worley, IMPACT

recent industry-wide survey by the Associated General Contractors of America (AGC) revealed that 70 percent of construction firms report having difficulty finding skilled craft workers.

One main reason for the skilled labor shortage is the lack of awareness and a plan to build a pipeline of workers. Regrettably, nontraditional career paths are often not presented to young people graduating high school as a viable and lucrative alternative to college. They are not often well-informed about nontraditional career alternatives.

It is time to stop telling our young people that their only path to success is a four-year college degree. We simply need to do better at promoting technical training at the middle and high school levels, and provide them with more non-traditional choices that lead to well-paying and highly successful careers. Jobs in the skilled trades are viewed as low-skill, low-paying jobs; that is simply not true.

Earn-while-you-learn apprenticeship programs in the building trades are like a four-year college degree, but with a good income and actual reallife, hands-on experience. These comprehensive three- to four- year programs produce higher quality workers with real work experience.

In addition to this type of education, we need to also do away with the "blue-collar" stereotype. It stifles interest among young people who might be highly gifted in various skilled trade crafts. Why wouldn't we encourage students gifted with necessary skills to be an ironworker when we encourage students gifted with skills to be an engineer? Both are well-paying, viable career options and both are crucial for the future of this country.

We need to educate our young people about nontraditional, lucrative alternatives to college by showing them the benefits of ironworking and all craft apprenticeships. There is an urgent need to raise awareness about the great careers that are available in the skilled trades.

I wanted to be an ironworker because I looked up to generations of ironworkers in my family. My father and uncles were ironworkers, and a few of my cousins are. I remember starting my career as an apprentice ironworker at Local 29 in Portland, Oregon, in 1986. I paid my way through college, working rebar in the summer. I worked as a journeyman in many areas of the trade.

By the second year of my apprenticeship, I knew that I wanted to be an apprentice coordinator. A few years later, I was selected as the apprentice coordinator for Local 29. Later, as the Northwest administrative coordinator, I worked with apprenticeship

coordinators to manage apprenticeship issues and encouraged them to be active in their state council meetinas.

Apprenticeship programs present an effective solution to the skilled labor shortage. Tapping into the existing high-caliber apprentice labor force is one of the best options in closing the gap. Highly-trained and skilled apprentices with on-the-job training graduate from accredited apprenticeship programs every day.

Apprenticeship programs are a crucial part of the Department of Labor's (DOL) workforce development initiatives for a good reason. Per the DOL, apprenticeships are a proven path to secure careers. Almost nine out of 10 apprentices are employed after completing their programs, with an average starting wage above \$50,000. If you make \$50,000 per year versus spending that or more on college, it's about a \$400,000 swing!

Apprenticeship programs provide great value to both apprentices and their employers. Apprentices receive comprehensive training for a suitable career in the skilled trades while earning a fair wage, and employers get the opportunity to train workers in a way that fits their current needs.

The return on investment for employers is impressive. Studies from around the globe suggest that for every dollar spent on apprenticeship, employers get an average of \$1.47 back in increased productivity, reduced waste and greater front-line innovation. Apprenticeships also help local businesses compete in the global economy.

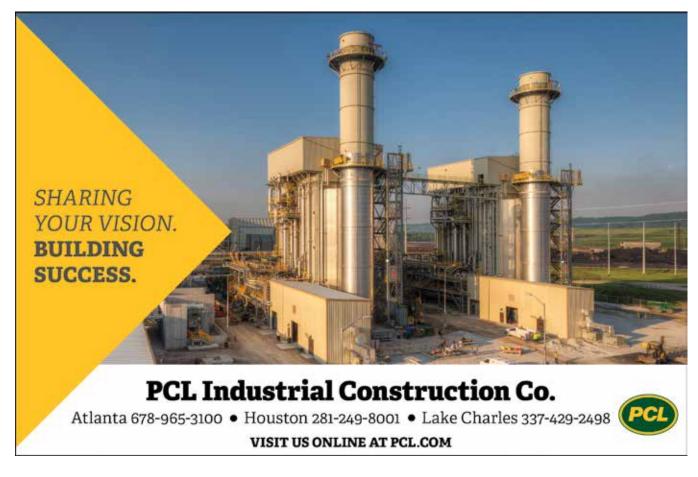
Both the Obama and Trump administrations recognized the role apprenticeships play in closing the skilled gap, and have supported the expansion of apprenticeship programs.

I hope to continue to make a difference doing what I do every day in the Iron Workers Apprenticeship and Training Department and, most recently, as part of a national effort to bring career-based solutions to the skilled-labor shortage, serving on the DOL's Advisory Committee on Apprenticeship.

May the experience and success of time-tested, earn-while-you-learn apprenticeship models, serve as a valuable resource for the Department's initiatives

Lee Worley is the Iron Workers (IW) Executive Director of Apprenticeship and Training. The IW recognizes that apprentices play an essential role in the growth and development of a safe and highlytrained workforce. Earn-while-youlearn apprenticeship programs help ironworkers make a fair wage with benefits, while training to be a journeyman in their field.

The IW is one of 15 organizations with similar business models, numbers and networks of brick and mortar facilities peppered across North America. The IW training centers collectively spend between 80 to 90 million dollars a year in training a skilled construction workforce. Learn more at www.ironworkers.org.



Securing Payment

By Fred Lyon, The Lyon Firm

t the end of the day, all of us are in this for the money. Which means that on any job, be it a construction contract, or a purchase order for the sale of goods or equipment, the most fundamental concern of a contractor or vendor is doing everything possible to secure the funds that are compensation for its performance.

This article explores the means of securing payment, both from a contractual/legal perspective and in light of commercial considerations.

Know your contract

Contract terms and conditions remain the most potent weapon in your arsenal to ensure that the payment process goes smoothly. The timing of invoices, the required documentation, and the turn-around should be expressly negotiated and understood. Payment terms which go beyond 45 days are unusual; if the customer/owner insists upon that much time, then invoices should be timely submitted and interest imposed in the event that 45 days passes without justification.

Both parties benefit from a payment schedule that adheres as closely as possible to the actual stage of the work. Unbalanced payment schedules are to the benefit of neither the customer or vendor.

Terms and conditions should provide for a right to stop work in the event of non-payment. Purchase orders for equipment should condition shipment on payment, even if only on a milestone basis. And to the greatest extent possible, retention should be minimized. Refusal to pay the final 10 percent is an all too often reality intended to maximize the client's closeout leverage.

A particular area of concern to avoid is broad setoff rights—allowing a customer to refuse to pay on Job A when the problems are confined to Job B. In those situations, setoff on the impacted job is customary; setoff on a totally unrelated job is not and can make a painful situation worse.

Lien rights are critical

Mechanic liens are a creature of statute in every jurisdiction, intended to provide unpaid vendors and contractors with the ability to file a lien against the project for which the work was done. In the event that the vendor or contractor remains unpaid, they can bring a suit to enforce the lien with foreclosure on the property the ultimate remedy.

Liens against real property are a powerful weapon, especially if the project is financed. Lenders and liens do not mix. Lien law is very specific to jurisdiction, in many instances riddled with very arcane and complex notice and filing requirements. Before beginning work, it is incumbent upon the supplier to confirm local lien requirements or risk losing this critically important tool to secure payment.

Waiver can be an issue with respect to mechanic liens, both with respect to the initial contract and later on during performance. Some clients draft terms and conditions that provide for a pre-performance waiver of all lien rights by the contractor or vendor. In many jurisdictions, such contractual waivers of lien rights are not enforceable. Before agreeing to such a waiver, a vendor should ascertain the enforceability of such a clause before "agreeing" to it.

During performance, owners will usually ask contractors to sign partial lien waivers tied to payment of invoices. All lien rights up to the date of the affidavit are waived. Lenders are especially insistent that owners obtain such waivers. If there are payment issues that predate the date of the waiver, then the vendor needs to carve out those issues from the terms of the waiver

Final waivers of lien can actually provide contractors and vendors with leverage. Before a job can closeout, the owner and its lender (if applicable) will need a final waiver of lien. Before providing it, the vendor should force the owner to deal with outstanding payment issues. Sign a final waiver without though, and you are out of luck. And leverage.

Security interests and equipment

The Uniform Commercial Code (UCC), via statute, provides a vendor's right to keep a security interest in its equipment to the extent payment is not made. The result is not unlike a mechanic's lien. Such interests typically require the filing of a financing statement in the local courthouse. To maintain this interest, it is again

important to work with counsel and act in accordance with statutory requirements.

Letters of credit are the gold standard

Letters of credit (LOC) secured by funds in a recognized bank remain a favored tool of owners to insure performance by a vendor or contractor. In certain situations, if, e.g., there is a concern that the owner may not have sufficient funds or is an unfamiliar entity, it is commercially feasible for a contractor to insist that the owner secure its payment obligations by posting a letter of credit.

In that event, the contractor notifies the bank of non-payment and the bank is obligated to recognize this draw by making payment of the unpaid funds. Letters of credit, however, are much like mechanic liens; if a draw is made, it must be in precise adherence to the terms of the letter. Address, language, all must be in strict accord with the LOC; otherwise the bank may not make payment.

Know vour customer

Taking steps to secure payment at the end of the day is commercially tied directly to how well you know your client. A first-time customer in an unfamiliar jurisdiction mandates a more aggressive approach to payment terms, lien right and letters of credit. But if you have worked successfully with someone in the past, you have more flexibility.

However, even in those cases, the past is not always prologue. If a valued customer from the past begins to have trouble on your latest job, do not assume things will get better. Notwithstanding past successes, present troubles mandate aggressive enforcement of payment terms and lien rights. To hope that there is a pony in here somewhere is a prescription for failure.

Fred Lyon is a construction attorney and mediator with over 35 years' experience in contract drafting and dispute resolution. He currently has offices in Florida, Washington, DC, and New Orleans. Learn more at www.lyonfirm.com.

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The 750-megawatt W.S. Lee combined-cycle plant in Anderson County, South Carolina, is expected to come online in late 2017.



This summer, the 1,640-megawatt combined-cycle project in Citrus County, Florida, reached its height of construction.



Pre-construction planning and some visible work are underway for the new 560-megawatt Asheville combined-cycle plant in North Carolina. Active construction is expected to start in fall 2017.



A rendering of Duke Energy's third combined-cycle project, located in Arden, North Carolina.

Duke Energy

tarting in the early 1900s as Catawba Power Company, Duke Energy was founded, in part, to help spur the economy in the Carolinas through the development of an integrated energy system of generating stations.

More than a century later, Duke Energy has evolved into one of the largest energy companies in the U.S., currently serving about 7.5 million customers in six states in the Southeast and Midwest. The company's

Gas Utilities and Infrastructure business unit also distributes natural gas to about 1.6 million customers in the Carolinas, Ohio, Kentucky and Tennessee.

Duke Energy believes strongly in giving back to the regions it serves by supporting educational and environmental initiatives as well as contributing to local communities through monetary donations and employee volunteerism.

"Our employees live, work and play in these local communities and have a vested interest in ensuring those communities thrive," says Heather



Danenhower, Communications Manager at Duke Energy.

As Duke Energy looks to the future, the company is investing billions in renewable energy and natural gas infrastructure and technology. As examples, Duke Energy owns and operates more than 35 solar facilities in North Carolinamaking the state No. 2 in the country for overall solar energy capacity. Currently, three new combined-cycle natural gas plants are also in various phases of construction in North Carolina, South Carolina and Florida.

W.S. Lee project to serve customers in late 2017

Duke Energy's first new combinedcycle plant will start serving customers in late 2017 at the W.S. Lee Steam Station in Anderson County, South Carolina.

Construction of the 750-megawatt plant is more than 90 percent complete. Crews are completing all remaining systems needed to bring the plant online, including startup testing of major components.

"This project demonstrates Duke Energy's commitment to modernizing our fleet, demonstrating environmental stewardship and creating a smarter, cleaner energy future," says Danenhower.

Construction and related activities have added several million dollars to the local economy, including about \$12 million to local subcontractors. During the height of construction, the project created about 600 temporary construction jobs. Once online, about 40 full-time workers will be needed to operate and maintain the plant.

Thanks to this investment. Duke Energy retired two older coal-fired units at the site in 2014 and decommissioning is underway. A third coal-fired unit was converted to natural gas.

As of 2014, Duke Energy no longer operates coal-fired plants in South Carolina.

Citrus project at height of construction

Construction of Duke Energy's second combined-cycle natural gas plant is about 50 percent complete. Crews broke ground on the new 1,640-megawatt plant in Citrus County, Florida, in March 2016.

Major components—such as the heat recovery steam generators, combustion turbines and steam turbines are on their foundations. Crews are currently installing cable trays, conduit and steam piping.

"The \$1.5 billion project is Duke Energy's largest combined-cycle natural gas plant under construction and one of the largest in the industry," Danenhower says. "More than 100 companies locally, across Florida and the United States,

and around the world, are benefiting from the project."

Locally, construction and related activities are expected to have an area economic benefit of more than \$600 million during construction and \$13 million annually when operating.

This summer marked the project's height of construction and currently more than 2.000 workers are at the site. Once construction is complete, 50 to 75 workers will be needed to operate and maintain the plant.

The plant is expected to start serving customers in 2018.

Visible work underway for new Asheville plant

A couple of permits are still needed for Duke Energy's third combinedcycle project at the existing Asheville site in Arden, North Carolina.

Though pre-construction planning and some visible work are underway for the new 560-megawatt plant, active construction is expected to start in fall 2017. The new plant is expected to start serving customers in late 2019.

The new plant will have two power blocks. Each power block will have one combustion turbine on one steam generator. General Electric is manufacturing the combustion turbine generators in Greenville, South Carolina, and PSNC Energy will provide the natural gas to the plant.

This combined-cycle natural gas plant will operate about 35 percent more efficiently than the exiting coal units

In addition to building this new plant, the \$1.1 billion Western Carolinas Modernization Project includes retiring the 376-megawatt coal units by 2020, excavating coal ash and closing two coal ash basins. Duke Energy is also partnering with the local community to leverage energy efficiency and conservation programs and evaluating sites for solar generation and utility-scale energy storage in the region.

The ultimate goal is to pave a new path for cleaner and smarter energy for customers and help them save money by using energy more efficiently.



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Fluor designed and built the new Brunswick County Power Station for Dominion Virginia Power. Fluor's construction staff and craft peaked at more than 1,500 team members. The completed power station will produce enough electricity to power 325,000 homes.



Fluor offers after-hours training at many of its jobsites, enabling workers to upgrade their skills.



In 2016, Fluor opened a Craft Training Center in Pasadena, Texas. The Center aids in developing the next generation of skilled craft workers.

Fluor Corporation

ounded in 1912 as a construction company in California, Fluor Corporation has evolved over the last century to become one of the world's largest publicly traded engineering, procurement, fabrication, construction (EPFC) and maintenance companies. Now active in more than 100 countries, Fluor currently designs, builds and maintains capital-efficient facilities for its diverse clients across six continents.

Based out of Irving, Texas, Fluor is more than 60,000 employees strong and maintains more than 100 offices in 36 countries. Fluor ranks number 149 on the Fortune 500 list and is consistently recognized for its safety, leadership development and ethics. As such, Fluor placed at the top spot in the Engineering & Construction Industry of Fortune's World's Most Admired

Companies list and has been recognized by *Ethisphere* magazine as a World's Most Ethical Company for 11 consecutive years.

Fluor currently serves more than 4,000 clients within a wide range of industries; including industry leaders in the energy, chemicals, power, infrastructure, life sciences, advanced manufacturing, mining and government sectors. Fluor's integrated solutions approach spans the entire project life cycle and delivers capital efficiency on projects.

"From the trans-Alaska pipeline in the 1970s to the world's largest chemical complex ever built in a single phase in the 2010s, Fluor has been a part of some of the most innovative and complex construction projects in our industry's history, including many in the Southeast," says Mark Truchan, Director of Craft Services at Fluor. "We are focused on developing capital-efficient solutions that provide cost and schedule certainty, which differentiates us from our competitors."

Fluor is currently active on a number of major projects across the U.S. Southeast, including major power plant projects in South Carolina, Florida and Virginia. In South Carolina, the company has become the design-build contractor for new Port Access Road Project in Charleston. In North Carolina, Fluor is constructing Novo Nordisk's new \$2 billion diabetes active pharmaceutical ingredient facility in Clayton, which is the single largest life sciences facility investment in North Carolina's history.

Fluor recently opened its U.S. Gulf Coast Craft Training Center in Texas where the company provides training that enables individuals to embark on high-demand, well-paying craft careers. The Center offers 12-week, tuition-free entry-level classes that give pre-employment training in the electrical, instrumentation, millwright and pipefitting disciplines, as well as welder upgrade training. Once the courses are complete, trainees receive industry-recognized, entry-level credentials, as well as certifications in one of the four trades.

"We have approximately 300 graduates a year, many of whom are now working on Fluor projects," says Truchan. "In fact, one of our clients has been so impressed by the graduates' caliber that they have asked all of our current electrical students to consider working on their upcoming project."

Fluor has also recently launched the Elite Craft Corps, which is a core team of highly skilled specialty welders and pipefitters. A 10-booth welding semitrailer accompanies the team to project sites, allowing them the opportunity to continuously upgrade their skills in the more difficult specialty welds, such as chrome and stainless steel.

"This 70-person team represents the best our industry has to offer in terms



Fluor completed construction management services for the Shire Biologics Facility in Covington, Georgia. The campus is over 1 million square feet!

of quality, safety and productivity, with some of the industry's lowest weld reject rates and highest productivity levels," says Truchan. "After completing a critical scope at project site in Texas, they have now mobilized to Florida to support a project where welding and pipefitting are ramping up."

Throughout the United States, Fluor is also supporting area colleges and high schools' craft education efforts by providing grants and equipment donations, which allows for the replacement of outdated welding equipment and for students to receive skilled craft training.

Fluor greatly values its membership with SCOAR, seeing the association as an important tool in remaining connected with its industry peers and for staying up-to-date within an increasingly competitive market.

"Fluor is focused on developing and implementing innovative solutions that drive the construction industry forward," says Truchan. "Through SCOAR, we have the opportunity to collaborate with owners and other industry colleagues on best practices so that we can all better deliver safe, capital-efficient and onschedule projects."



SCOAR News

SCOAR SCHOLARSHIPS & TOPS SAFETY AWARDS, 2017 REVIEW

See pictures of all the award winners at www.scoar.org

SCOAR TOPS SAFETY AWARDS

Lance Simons, Haskell, and Rosa Webster, TECO, from the SCOAR Safety Committee, and Randy Bakel, SCOAR, presented the TOPS Safety Awards.

The ProServe Industrial Award

This award (less than or equal to 60,000 work hours annually) was presented to Eric Allen.

The Classic Industrial Services Award

This award (greater than 60,000 and less than 250,000 work hours annually) was presented to Flip Bourgeois and David Ford.

The Haskell Award

This award (greater than 750,000 work hours annually) was presented to Boyd Worsham.

The S&B Engineers & Constructors Award

This award (greater than 750,000 work hours annually) was presented to Greg Atteberry and Chris Vanderbeck.

SCOAR SAFE SUPPLIER/VENDOR AWARDS

These awards recognize outstanding safety in the course of business with a SCOAR member company (must be nominated by SCOAR members). The Vendor Award Winners were Brand Energy Services, and Superheat FGH.

SCOAR SCHOLARSHIP AWARD WINNERS

Thanks to all of the Golf/Fishing Tourney sponsors and SCOAR members, we were able to award \$61,000 in scholarships this year!



SCOAR Engineering Scholarship

Congratulations to Taylor Humbarger, University of Florida, College of Engineering, winner of a 2017 SCOAR Engineering Scholarship worth \$6,000. The award was presented by Tom Stapleton, PCL Industrial. PCL Industrial was a 2017 Engineering Scholarship sponsor. Thank you!



SCOAR Engineering Scholarship

Congratulations to Jamie Spangler, University of South Florida, winner of a 2017 SCOAR Engineering Scholarship

worth \$6,000. The award was presented by Don Ahrens, Moretrench. Moretrench was a 2017 Engineering Scholarship sponsor. Thank you!





SCOAR Construction Professional Scholarship

Congratulations to Sarah Herges, University of Florida, Rinker School of Construction, winner of a 2017 SCOAR Construction Professional Scholarship worth \$6,000. The award was presented by Dan Belcher, Build Your Future (BYF) & NCCER. BYF and NCCER were 2017 Construction Professional Scholarship sponsors. Thank you!





SCOAR Safety Professional Scholarships

Congratulations to Preston Chaney and Daniel Cuevas, Southeastern Louisiana University, winners of a 2017 a SCOAR Construction Safety Professional Scholarship, each worth \$2,500. The awards were presented by Lance Simons, Boyd Worsham, Haskell, and Rosa Webster, all of TECO. Thank you to Haskell, sponsor for these 2017 Safety Professional Scholarships!

Congratulations to Emily Cothern and Alan Williamson, Southeastern Louisiana University, also winners of a 2017 SCOAR Construction Safety Professional Scholarship, each worth \$2,500. This set was presented by Lance Simons, Haskell; Marc Elig, United Rentals; and Rosa Webster, TECO. Thank you to United Rentals, sponsors of these 2017 Safety Professional Scholarships!

SCOAR Skilled Trades Scholarships

SCOAR presented 33 Skilled Trades Scholarships, valued at \$1,000 each, to Skills USA. Accepting for Skills USA was Jessica Donelan. Thank you to all of these sponsors: Fluor (two scholarships); Next Generation Scaffolding (two scholarships); S&B Engineers & Constructors (two scholarships); Avalotis; Bradley Sales; BYF/NCCER; Ironworkers SE District Council/ IMPACT; Mosaic; Performance Technical Services (PTS); Safway; Southeastern Construction & Maintenance; Tampa Electric; W.W. Gay Mechanical Contractor; and Zachry.

THE 14TH ANNUAL GOLF/FISHING **SCHOLARSHIP FUNDRAISER**

Thank You to All Our Fundraiser Sponsors!

In addition to all of the amazing scholarship sponsors, SCOAR would like to thank these businesses for helping to make this event possible.

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SCOAR PROGRAM MEETING, ANNUAL BOARD PLANNING MEETING, OWNERS FORUM, SPORTING **CLAYS FUNDRAISER**

October 15-18, 2017

Omni Amelia Island Plantation Amelia Island. Florida

SCOAR is planning its next event! Topics covered will include an economic outlook for the United States and, more specifically, the southeast corner of the United States; improving frontline supervision; safety best practices from a TOPS winner; new emerging technologies, company showcases, and more!

Thank you to Program Meeting sponsors to date: Haskell Steel Fabrication and Sims Crane. In addition, W.W. Gay Mechanical is sponsoring lunch; Impact/Ironworkers are sponsoring breakfast; AsTech Inc. is sponsoring the AM Break, and Brand/Safway, IREX Corp., and Southern States Millwrights are display sponsors. If you're interested in sponsoring this event, or any other SCOAR event, get in touch! We are looking for meal sponsors and networking break sponsors. There are many options!

On Monday, October 16, participants will gather at Amelia Shotgun Sports, for the annual Sporting Clays Fundraiser. Monies raised at this event go directly to students studying skilled trades at local colleges. Sponsors as of press time are Southern States Millwrights (Gold); PCL and Next Generation Scaffolding (Silver); Brand/Safway, Fluor, Sunbelt Industrial, W.W. Gay, Southeastern Construction & Maintenance (Teams); and Distribution International (Social).

Go to www.scoar.org to see an agenda, or get in touch with Randy Bakel, 585-781-4001, for more details.

THANK YOU SPONSORS!

In May 2017, SCOAR hosted a very successful meeting in Longboat Key, Florida. One hundred and sixty-five members and guests attended. Thank you to these meeting sponsors: Johns Manville Industrial Insulation Group and Hikvision USA for sponsoring the meeting; Next Generation Scaffolding and W.W. Gay Mechanical Contractor for breakfast; AVALOTIS and Victaulic for lunch; and Ironworkers District Council/IMPACT and Unitherm for the breaks.



Sponsor a SCOAR event! **Contact Randy Bakel for details.**

Why Join SCOAR?

SCOAR fosters innovation and breakthrough thinking on issues related to industrial construction to improve your business performance.

SCOAR's dedication to learning is unique among associations serving the construction industry, giving you and your company the greatest return on the investment of your time and money.

Our membership is comprised of industrial facility owners, EPC companies, engineers, general and specialty contractors, labor and material suppliers, as well as service suppliers, educators and consultants.

HOW SCOAR IS DIFFERENT!

SCOAR is an interactive learning alliance of construction professionals.

- Spend your time learning and addressing interesting and challenging topics, not stuck working on the typical association-type committee.
- · Benefit from an interactive learning environment focused around teambased exercises, subject matter experts and collaborative discussions.
- Be a part of creating new methods and processes to tackle the typical construction issues and challenges.

Case Example: "A new solution to an old problem."

The project started going wrong in the engineering phase. As it moved into construction, the project was behind schedule and over budget. The SCOAR member recalls, "The owner (us) was not happy and my engineering and construction teams were pretty dispirited. Typically, we might go in and make some wholesale personnel changes, but I knew I had good people on the teams."

SCOAR had recently brought in an expert from outside the construction industry to discuss the Judgment Index, a scientifically-based assessment tool that measures, among other things, the level of engagement on a project. "I was intrigued by the concept and thought it was worth a try," says the owner.

The owner brought in the expert, who took the engineering and construction teams, as well as key contractors, through a day long exercise.

"It worked. The process creates a lot of self-reflection. It makes you ask, 'why is my responsibility here.' It got everybody past the typical finger pointing

and working together again. In the end, we were able to turn the project around and bring it in much closer to the original schedule and budget."

Harness the creativity and experience the diversity. SCOAR brings together facility owners from different industries and all parts of the supply chain to address the issues that will improve business performance.

- Combine experience bases and methodologies from different industries to discover new solutions.
- Understand and incorporate perspectives from various parts of the supply chain to create comprehensive responses to construction challenges with great changes for success.
- Learn from construction professionals who have already "been there and done that."

Case Example: "A whole new way to do business."

A long-time owner-member of SCOAR recently retired from his position managing construction for a utility company. He was approached by a supplier-member of SCOAR seeking help in bidding on the construction of a new energy plant. A third member of SCOAR, a large general contractor, was added to the team. Combining each team members' expertise and leveraging the working relationships developed through their time at SCOAR, this group proposed a new and innovative approach and won the bid.

"The client could see immediately how our approach is going to save them tens of millions of dollars, versus the standard way this stodgy industry goes about building this type of plant."

Focus close to home, on Southeastern construction market, for a practical and actionable experience.

- Concentrate on regional labor and supply trends where impactful solutions can be generated and imple-
- Learn about and share information on capital projects in the Southeast, increasing insight into your market and identifying potential partner-
- Experience more powerful networking by meeting colleagues in your own area who are facing the same issues and environment.

Case Example: "SCOAR learnings are more actionable."

A long-time owner-member commented that the interactions at SCOAR events resulted in learnings that "are more specific to the Southeast," taking into account the Southeastern environment—companies, cultures, behaviors and climate—and resulting in solutions that "we can actually implement."

Enjoy a collegial and "small group" atmosphere.

- Every member has a voice in the direction and focus of SCOAR. You help choose the focus.
- The informal and supportive atmosphere, where everyone is focused on learning, leads to a better and more fun way to accomplish objectives.
- Profit from a better approach to learning about and evaluating potential suppliers unencumbered by the pressures of the contracting process.

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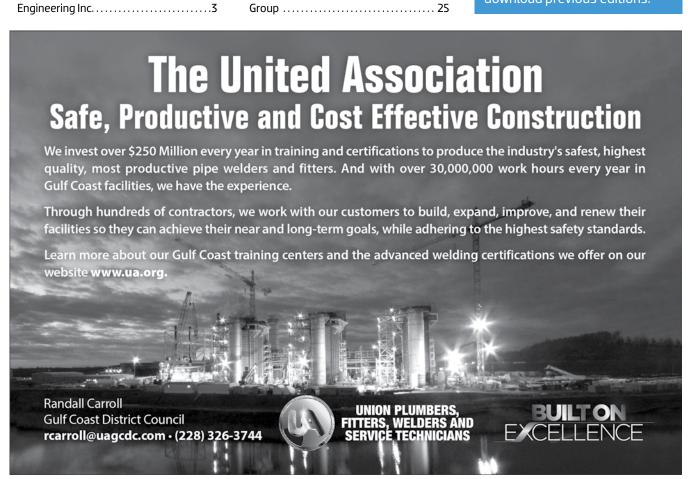
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Mechanical Contractors Association Central Florida



The Mechanical Contractors Association of Central Florida and United Association Local Union 123 Charity Foundation proudly announce

The 15th Annual Charity Piping Industry Golf Outing.

This Foundation event has raised over \$320,000.00 for Tampa Bay area charities, thanks to the continued generosity of supporters like you.

The date for the 2018 outing is February 2nd.

The location will be The Eagles Golf Club in Odessa, Florida.

Please come out and join us this year and please consider the various levels of sponsorship as well as individual hole and beverage cart sponsorships that are available. For information please contact us.

This occasion is truly a great opportunity to contribute and be recognized for it! Whether you decide to play or donate through a sponsorship, we heartily thank you for supporting this great event.

Please call:

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