

THE ELECTRIC TIMES

SERVING THE ELECTRICAL INDUSTRY IN ARIZONA

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Pilkington Construction Company of Yuma adds new electrical contracting division

Alan M. Petrillo
Electric Times

Pilkington Construction Company, a Yuma, Ariz. general contractor that has performed work in four western states, has added an electrical contracting division to its business model, building on the owner's background in electrical engineering and electrical contracting.

Clint Harrington, president of Pilkington Construction, who purchased the business from the Pilkington family which founded the company, said that Pilkington Construction has a reputation for relationships with its customers that are built on respect, trust and honesty.

"Contractors in big cities can specialize in one industry or area of expertise," Harrington said, "but to succeed in Yuma and elsewhere in the southwest, we need to be able to offer each customer all of the services they need. And that's one of the reasons why we established our electrical contracting division, instead of subcontracting that work out."



Brian Riveria works in the 351-kilovolt photovoltaic parking structure that Pilkington put up for San Luis Medical Mall.

Harrington's grandparents, Cal and Joann Harrington, owned and ran C&H Electric, and his father, David Harrington, founded D&H Electric, where Clint Harrington began working part-time as a teenager.

"While I was working for my father, I earned an electrical engineering degree from the University of Arizona, but realized that I still needed a lot of hands-on training in the nuts and bolts of electrical contracting work," he noted. "So I went through and graduated from the four-year apprenticeship program of the Independent Electrical Contractors Arizona Chapter (IEC-AZ)."

Harrington became a co-owner of the minority, woman-owned MAC Electric after his marriage, but following his divorce years later, he had to sell his stake in the business. That change led to Harrington purchasing Pilkington Construction.

"We have an amazing team of men and women working here, along with a crew of five electricians in our electrical contracting division," Harrington pointed out. "We have

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New Arizona law eases contractor advertising requirements

Alan M. Petrillo
Electric Times

Amendments to an Arizona law that went into effect on Sept. 29 regarding many forms of advertising will make things a bit easier for licensed contractors in the state.

Prior to the signing of H.B. 2545 by Governor Doug Ducey in March, Arizona law required licensed contractors to display their Arizona Registrar of Contractors (ROC) license number on "all broadcast, published, internet or billboard advertising, letterheads, and other documents used by the licensee to correspond with the licensee's customers or potential customers."

The requirement changed with Ducey's

signature on H.B. 2545, which provides an exception to the long-standing advertising requirement.

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Jamie Hanson, an attorney with Lang & Klain PC, a Scottsdale law firm of construction, litigation and business attorneys who represent contractors, subcontractors and general business owners in construction law, said that the law is the state's

attempt to make the licensing statutes easier to manage and to navigate for contractors.

Hanson said that with the new law, licensed contractors are excused from displaying or mentioning their license number on broadcast, internet or billboard advertising, including vehicle signage, if the ad includes a web address that "prominently displays the licensee's name and license number."

Hanson pointed out that the ROC has explained, that for those purposes, a licensee's name and ROC license number are "prominently displayed" if they:

- Appear directly on the home page of the website, other than in the footer
- Are clearly visible without obstruction

from photos or other graphics

- And appear in an appropriate font size.

While the new exception applies only to internet, broadcast and outdoor advertising, Hanson noted that contractors are still required to display their ROC license numbers on all written bids, estimates, print advertising, letterhead, and any other documents the contractor uses to communicate with customers or potential customers.

Hanson explained that the ROC issued a substantive policy statement regarding online advertising, making it clear that the sticker on a contractor's truck falls within the category of billboard advertising.

"Contractors can rely on that ROC interpretation," he said.

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News Briefs

ABA needs help collecting toys for children

Phoenix, Ariz. – The Arizona Builders Alliance (ABA) is calling on construction workers across the state to help them make a difference in the lives of hundreds of children in need this holiday season. As a part of their annual toy drive, the ABA Community Service Board has begun collecting toys, gifts, and donations for five nonprofit organizations that serve more than 1,880 children.

The ABA will use monetary donations to purchase toys from a wholesaler, then sort and wrap all the gifts for children at Sunshine Acres Children's Home, Sunshine Residential Homes, Sojourner Center, Santo Niño Catholic Community, and ASA Now. These charities serve children who are separated from their parents, survived abuse and neglect, or whose families cannot afford to buy Christmas gifts.

"We look forward to sponsoring our annual toy drive to bring together the local construction industry and support nonprofits that care for our most vulnerable children and adults in the community," said Erica Lange, ABA vice president.

The ABA teamed up with 45 Valley construction companies including Rosendin, which is sponsoring a second-grade class from Sequoia Charter School that has a dozen students in need. Other contractors, such as JE Dunn Construction, McCarthy Building Companies, and Hensel Phelps are urging employees to bring a toy to their local office or make a monetary donation before their gift-wrapping event on Dec. 14.

Donors may also drop off toys and gifts at the main collection site located at TDIndustries' Warehouse, 1888 E. Broadway Road in Tempe by calling (602) 536-7807 in advance.

All contributions are tax-deductible, and the public is welcome to make monetary donations through the ABA's website at [azbuilders.org.org](https://eventinterface.com/toydrivedonations/), calling 602-274-8222, or by going to the online portal at <https://eventinterface.com/toydrivedonations/>.

Leviton Appoints Daryoush Larizadeh to Chief Executive Officer

Melville, N.Y. – On Dec. 1 Leviton announced the appointment of Daryoush Larizadeh to Chief Executive Officer, effective as of December 1, 2021. Larizadeh will continue his responsibilities as president and COO, in addition to assuming the CEO role.

In his current capacity, Larizadeh has been President and COO of Leviton for the past six years, overseeing Leviton's continued growth and building on the company's successful history and culture of innovation.

"Daryoush has been instrumental to Leviton's success as president and COO and played a pivotal role in helping to navigate our employees and customers through a global pandemic," said Hendler. "Daryoush's proven performance and leadership skills will continue to shape Leviton's future as an innovative leader in the industry," Hendler stated. Larizadeh assumes the role of CEO from Hendler who held the title since 2007 following the passing of Harold Leviton, whose father founded the company in 1906. Larizadeh becomes only the fourth CEO since the company's founding 115 years ago.

"I am honored and humbled to take on the role of CEO at a company that's been built on a long and successful history of innovation," Larizadeh expressed. "Working closely alongside Don as President and COO has provided me with an unparalleled learning experience, and I am excited to build on the legacy that Don and our two previous CEOs have built during our 115 years of existence."

Also effective December 1, 2021, Hendler will assume the role of chairman of the board. Stephen Sokolow, who last held this position, will become chairman of the board emeritus while vice president of the corporation.

The Leviton board remains unchanged with Hendler, Sokolow, Andrew Kriegman and Lucy Guilherme continuing in their current responsibilities.

Code Corner: Reconditioned

Mark Cook
Electrical Training Instructor



We first saw this word used in the, 2017, National Electrical Code. It was found in section 110.21(A)(2) which, echoed in the 2020 Code, requires

marking on reconditioned equipment that indicates the name, trademark, or other descriptive markings by which the organization responsible for reconditioning the equipment can be identified along with the date of the reconditioning. This reconditioned equipment shall be identified as reconditioned, and approval of this equipment shall not be based solely on the equipment's original listing.

In Article 100, Definitions, of the 2020 NEC, you will find a definition of the new word **reconditioned**:

Electromechanical systems, equipment, apparatus, or components that are restored to operating conditions. This process differs from normal servicing of equipment that remains within the facility or replacement of listed equipment on a one-to-one basis.

An informational note following the definition states that this is frequently referred to as "rebuilt, refurbished, or remanufactured."

In the 2020 NEC the term Reconditioned is used 25 times, mostly in Chapters 2 for Wiring and Protection and Chapter 4 for Equipment for General Use.

110.3(A) Examination of Equipment first mentions the use of reconditioned in Informational Note 1. It permits it generally.

Then 110.21(A)(2) requires labels to identify this equipment as reconditioned as specified above.

Of course, there is certain equipment that should not and must not be rebuilt or refurbished. 210.15 has a small list of devices used in branch circuits. This would include GFCI used to protect equipment and GFCI used to protect personnel as well as AFCI devices used to detect dangerous arcing conditions.

240.62 does not permit low-voltage fuseholders and renewable fuses to be reconditioned and 240.102 applies the same rule to these devices over 1000 volts. But in 240.88 the NEC permits low and medium voltage power circuit breakers to be reconditioned as well as high voltage circuit breakers. However, molded case circuit breakers are not permitted to be rebuilt or refurbished.

Additionally, circuit breaker electronic trip units shall not be reconditioned. But the same Code section permits electromechanical protective relays and current transformers to be rebuilt, refurbished, or remanufactured.

406.3(A) and 406.7 does not permit receptacles, attachment plugs, cord connectors, or flanged surface devices to be reconditioned.

Article 408 in section 408.8 restricts panelboards from being reconditioned but permits switchgear and switchboards to be rebuilt, refurbished, or remanufactured. This process shall comply with the manufacturer and if damaged by water it must be evaluated by the manufacturer. In all cases a new label must be affixed in compliance with 110.21(A)(2).

For switchgear over 1000 volts Article 490 allows rebuilding or refurbishing under very stringent conditions.

In article 410 it states retrofit kits to not be considered as reconditioned and Article 411 does not allow low-voltage lighting systems to be reconditioned.

More importantly, fire pump controllers, shall not be reconditioned as per 695.10

700.5(C), 701.5(C) and 702.5(A) will not permit ATS's (automatic transfer switches) to be rebuilt or refurbished.

Older, legacy equipment or obsolete equipment is often bought and sold. Reputable dealers have strict guidelines for testing and verifying the operation of these components. Often, they belong to organizations such as PEARL (Professional Electrical Apparatus Reconditioning League) which can help verify and validate the facility and staff for compliance of standards. Obsolete equipment that has been stored on a shelf for 50 years is not considered to be reconditioned.

These providers have often saved me and my customers from a more costly, complete equipment change-out because there was a brand new, 50-year-old, circuit breaker sitting on a shelf in a warehouse in another state with my name on it.

Mark Cook is Electrical Education Specialist for Faith Technologies in Neenah, Wis. He has been in the electrical industry since 1978 and owned a contracting business from 1994-2015. He was an instructor for the IEC of Arizona and The Electric League of Arizona and has presented for NEC and other organizations. Questions/comments: mark.cook@faithtechnologies.com

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Managing Editor

Paul R. Palmer

Business Manager

Heidi Sheridan

Publishing Assistant

Jayne Cook

Editorial/Advertising Office:

2702 N. 3rd Street, Suite 2020 • Phoenix, AZ 85004

Phone (602) 263-8519 • Fax (602) 277-9881

Editorial: editor@elaz.org

Advertising: adsales@elaz.org

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Arizona Construction Career Days sees 3,000 students attend event at Army National Guard Papago site

Alan M. Petrillo
Electric Times

Arizona Construction Career Days, sponsored by the non-profit Association for Construction Career Development (ACCD), attracted 3,000 students from around the state to its two-day event held early in November at the Arizona National Guard, Papago Site in Phoenix.

Rose Ann Canizales, ACCD president, said that the students came from 106 schools in ten of Arizona's 15 counties.

"We also were able to use federal grant money in the amount of \$4,250 to provide transportation assistance to those schools that needed help with getting to and from the Construction Career Days," Canizales pointed out.

Students attending Arizona Construction Career Days were able to spend two days at work in the construction industry with real life applications, Canizales noted. Hands-on demonstrations included estimating projects, constructing a toolbox, pipe design and building, CADD work, constructing brick walls, and cement mixing and setting, she said. High school students also had the opportunity to talk with 62 exhibitors during the two-day event, 17 of which were housed in large 20 foot by 100-foot spaces on an Air National Guard runway.

Canizales noted that with this year's event, ACCD will have exceeded 30,000 students who have attended in the past 20 years, many of whom have gone on in construction trade jobs to fill the Arizona's skilled labor pipeline.

"Attending Arizona Construction Career Days shows these students that they can



Students arrive at the Construction Career Days event (top). A conduit bending training station was among the presentations (below).

make a great living without college debt," she said. "They are getting into apprenticeship programs in the various trades, and after graduation, being snapped up as new hires by contractors."

Rosendin, one of the country's largest employee-owned electrical contracting companies and one of the sponsors of the event, had 55 employees volunteer to staff its exhibit space to give students insight into STEM (science, technology, engineering and mathematics) careers using computer modeling and augmented reality, as well as offering hands-on activities that included basic electrical wiring, fabricating tubes, and bending electrical conduit.

"This event is the perfect place for us to reach the next generation by introducing and educating students about careers in the construction field," said Ben Mlinar, Rosendin division manager. "Our hope is to inspire young women and men of all backgrounds about the opportunities to them outside of college. Our industry as a whole is growing and we need more people. The great thing about coming into this field is that you're getting paid while you're learning, and taking on little to no debt."

Lisa McFate, marketing manager for Wilson Electric Services Corp., said Wilson Electric had an exhibit booth where students participated in hands-on activities.

"We had two stations where students could wire an electric light or a fire alarm," McFate noted. "The students who did the wiring tests were pretty good with those activities, and seemed to like the fire alarm the most, because if they did the wiring

See 'ACCD' page 6

Wishing you all things bright and beautiful this holiday season.

Best wishes for a prosperous 2022.

We will be closed for Christmas on December 24 and for New Year's on December 31, so our employee-owners can celebrate with their families.

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Appeals court continues stay on implementation of OSHA Emergency Temporary Standard on vaccine mandates

Alan M. Petrillo
Electric Times

The United States Court of Appeals for the Fifth Circuit has continued its stay on the implementation of the OSHA Emergency Temporary Standard (ETS) on vaccine mandates and testing pending a full review of the request for a permanent injunction.

The decision brings to a temporary halt the Biden Administration's efforts to impose the standard on employers of 100 or more employees, and effectively bars OSHA from implementing and enforcing the standard.

The Fifth Circuit issued a 22-page ruling that set forth several reasons why the temporary standard should be permanently enjoined, including holding that COVID-19 was not the proper subject for administrative action by OSHA. In its ruling the court stated that in order for an emergency regu-

lation to be upheld, OSHA must show that it is necessary to protect employees from a "grave danger" to exposure to "substances or agents determined to be toxic or physically harmful."

The court pointed out that COVID-19 is widely present and not particular to any specific workplace, and that it did not pose a grave danger, was non-life threatening to a vast majority of employees, and did not arise to such a toxic or physically harmful substance or agent contemplated by the Occupational Safety and Health Act.

Biden had issued an executive order in September that requires private companies with 100 or more employees to mandate the COVID-19 vaccine for their employees and directed OSHA to develop an emergency rule that would require companies with 100 or more employees to mandate the vaccine or to put in place a weekly testing system.

The ETS being enjoined from taking effect would require employers with 100 or more employees, firm- or corporate-wide to do the following:

- Determine the vaccination status of each employee, obtain acceptable proof of vaccination status from the vaccinated employees, and maintain records and a roster of each employee's vaccination status.
- Provide paid time to workers to get vaccinated and allow for paid leave to recover from any side effects.
- Ensure each worker who is not fully vaccinated is tested for COVID-19 at least weekly (if the worker is in the workplace at least once a week) or within seven days before returning to work (if the worker is away from the workplace for a week or longer).
- Require employees to provide prompt

notice when they test positive for COVID-19 or receive a COVID-19 diagnosis. Employers must then remove the employee from the workplace, regardless of vaccination status; employers must not allow them to return to work until they meet required criteria.

- Ensure that, in most circumstances, each employee who has not been fully vaccinated wears a face covering when indoors or when occupying a vehicle with another person for work purposes.

In addition, employers also must support vaccination by providing employees reasonable time, including up to four hours of paid time, to receive each primary vaccination dose. This includes reasonable time and paid sick leave to recover from any side effects experienced following each primary vaccination dose.

J.R. Walton of Bob Jones & Associates passes away

Las Vegas, Nev. – James Ross Walton, better known as 'J.R.', 63, passed away on Nov. 6. The son of Norma and Trevor Walton, he was born on May 10, 1958, in Las Vegas, Nev.

J.R. experienced a difficult childhood. His father walked out on the family when J.R. was only eight years old. As the eldest child, J.R. assumed responsibility as 'man of the house,' caring for his mother and three siblings—Kim, Richard, and Grant (deceased 2019). J.R. would later recall that it was his difficult childhood that gave him such a strong work ethic.

As a teenager in high school, J.R. worked at his uncle's gas station on the Las Vegas Strip. After graduating, he was hired by the Centel Telephone Company (owned by Sprint Communications) as a warehouse worker. He quickly climbed the ranks to become a field technician, where he installed and maintained distribution frames, pay-phones and climbed telephone poles. Over the course of his early career with Centel, J.R. became a very important asset to the company, serving as project manager, supervisor and contract administrator. He also provided outside processing (OSP) training for subcontractors. During his time at Centel, J.R. married his wife, Charla, and they started a family together.

In 2003, after more than two decades in

the utilities and telecommunications industry, J.R. decided to work as an electrician. He wired-up many homes in the Las Vegas area, including his own custom home.

In 2006, J.R. retired his tool belt, and pursued a new career path as a manufacturer's representative. He was hired by Electric-Group as outside sales (and later, sales manager), for the Southwest territory. He served suppliers and distributors in the electrical, utility and datacom/low voltage market.

In October of 2010, J.R. joined Bob Jones & Associates (BJA), where he was responsible for the Las Vegas market, as well as the Colorado River Run; Yuma, Ariz.; and El Centro, Calif. For nearly 11 years, J.R. cultivated many long-term friendships with distributors, contractors, and suppliers in the BJA line card.

In 2018, J.R.'s daughter, Christi, and son-in-law Cole, received news that would forever change their lives. With no warning, and no family history, their two sons Logan and Mason were diagnosed with Duchenne Muscular Dystrophy (DMD). This rare degenerative muscle disease affects every muscle in the body, including the heart and lungs. Today, both of J.R.'s grandsons rely on



J.R. Walton

kids to be taken care of. If you were a friend, colleague, or acquaintance of J.R.'s, and you want to make a contribution in his memory, I highly encourage you to donate whatever you can to Christi and her family."

Friends, family and colleagues regarded J.R. as a true patriot, with a deep love for God and his country. He was a big fan of professional ice hockey, and supported the Las Vegas Raiders and Golden Knights. In his off-time, he enjoyed golf, and traveling with his wife, children and friends. His humor, strength, generosity and love for his family and friends made J.R. a man who was incredibly loved and admired by many.

J.R. Walton is survived by his wife Charla of 41 years, their son Micah, and their daughter Christi; as well as Christi's husband Cole, and their children Logan, Mason and Addison.

Those planning an expression of sympathy may wish to consider pledging a donation to Christi Cazin's (J.R.'s daughter) family. Donations may be made by Venmo (@Christi-Cazin), Paypal (@LoganandMason), or you can contact Christi Cazin at 702-339-0451 or Christi.cazin@gmail.com for further information.

power wheelchairs to get around. Thankfully their spirit remains strong, resilient and full of faith. They are amazing kids who inspire those around them every day.

"Although flowers are beautiful," said Jeff Jones, principal of Bob Jones & Associates, "we feel that J.R. would want his grand-

Pilkington

Continued from page 1

done a lot of work at Department of Defense locations, including Hill Air Force Base in South Ogden, Utah; Naval Base Point Loma in California; Marine Air Corps Station Yuma; Yuma Proving Grounds; Kirtland Air Force Base in Albuquerque, New Mexico; and Davis-Monthan Air Force Base in Tucson, Arizona."

Harrington also works with junior high and high school students in Yuma teaching an electrical trades class through the Arizona Business Education Coalition (ABEC).

"We give the kids an idea of what it's like to work in the trades, both general construction and electrical, talk to them about the productive careers they can make for themselves, and provide all the materials necessary to demonstrate the work that we are discussing," Harrington said. "We need to reach out and impress on these kids in school that a career in one of the construction trades could be very beneficial for them." Content

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Lighting Unlimited holds open house and vendor fair

R. Palmer
Electric Times

On Nov. 18, Lighting Unlimited held an open house called Lights, Lunch and Ice Cream at its downtown location. Typically an annual gathering, This was the first such event since COVID.

The day featured about 20 vendors on hand, lunch and ice cream served, prizes, raffles and a chance for industry people to return to an in-person event and catch up with clients, friends and colleagues.

“It was great, and I think we had about 250 people,” said Lighting Unlimited President Cory Schneider.

The unique downtown Phoenix Lighting Unlimited facility at 1550 E. Washington Street recently won a 2021 BOMA TOBY award. The Outstanding Building of the Year (TOBY) award is a prestigious, extensively-judged award presented by the Building Owners and Managers Association of Great Phoenix (BOMA). Lighting Unlimited won in the Industrial category. An awards ceremony was held in Scottsdale in November.

See ‘Open house’ page 8



About 250 visitors stopped by the downtown Lighting Unlimited location on Nov. 18.

NECA elects Kirk Davis as 36th national President

Nashville, Tenn. – During a meeting of the National Electrical Contractors Association (NECA) Board of Governors Oct. 9, Kirk Davis, longtime president of Bob Davis Electric Co., in Shreveport, La., was elected to serve as the 36th President in NECA history. He will serve a two-year term, commencing Jan. 1, 2022.

Hailing from a family of electrical contractors, Davis graduated from Louisiana State University in 1975. After graduation, he entered the JATC apprenticeship and successfully completed the program in 1979. Davis worked as a journeyman for several years until assuming a management role in 1984. Upon his father’s retirement in

1990, Davis assumed the role of president of Bob Davis Electric Company Inc., a role he held until April 2019, when the duties were passed to his son Todd. Davis has served as NECA’s District 3 vice president for the last four years.

“I am truly honored to be given the opportunity to serve as NECA’s 36th president. I do not take this responsibility lightly, and I am excited to hit the ground running, representing our entire association,” Davis said. “I want to thank current president Larry Beltramo for his years of service to our association, our incoming and outgoing vice Presidents, our governors and chapter Executives, and our CEO David Long for

their support and commitment to our industry. It is my goal to understand the needs and goals of every contractor in our membership, regardless of size, location, or type of work. I cannot wait to get started.”

In his introductory speech, Davis discussed many of the pressing issues facing our industry today, including the ongoing fight against COVID-19, workforce development, construction technology and new projects, and more.

NECA’s national office and 118 local chapters advance the industry through advocacy, education, research, and standards development.



Kirk Davis

ACCD

Continued from page 3

right, once they hit the switch, the alarm would sound.”

McFate pointed out that Wilson Electric had two of its apprentices working with her in the exhibit space, including Danny Untal, an apprentice who came to Wilson Electric in 2019 as a result of attending Arizona Construction Career Days that year. Wilson Electric has 780 employees in four offices in Arizona (Tempe, Tucson, Sierra Vista, and Prescott); as well as offices in Salt Lake City, Utah; Boise, Idaho; and Albuquerque and Las Cruces, New Mexico.

Community partners that sponsored the Arizona Construction Career Days were the Army Air National Guard, the Arizona Department of Education, the Arizona Department of Transportation, and the Federal Highway Administration.

Platinum sponsors of Arizona Construction Career Days were Arizona Chapter of the National Electrical Contractors Association, Cactus Asphalt, BPG Design, Oakland, McCarthy Building Companies, RDO Equipment Co., Rosendin, Hensel Phelps, Build Your Future, and Arizona Earthworks.

The event featured a VIP Reception on the opening day for a meet and greet among attendees, followed by a program that had Canizales give a welcome, and Steve Trussell, executive director of Arizona Rock Products Association and the Arizona Mining Association, serve as master of ceremonies.

Keynote speakers were Major General Kerry Muehlenbeck, Adjutant General of the Arizona National Guard and Arizona director of emergency management; and

Justin Kelton, Southwest regional president for McCarthy Building Companies. During that program, Cindy Gutierrez, director of programs for Arizona Department of Edu-

cation’s Career Technical Education (CTE) program, was presented the Visionary Leadership Award.

Allied Group Sales completes office renovation with the installation of electric vehicle charging stations

Phoenix, Ariz. – With the installation of two electric vehicle charging stations in November, Allied Group Sales (AGS) has finished a complete interior and minor exterior renovation of its office and warehouse facility located at 201 S 28th Street in Phoenix, Ariz.

After acquiring Total Lighting and Control in 2018, and operating the business in two separate facilities, AGS owners, Tim Klei and Michael Knoblock, decided to completely renovate its main headquarters in Phoenix so they could join the two teams together in one building. The office facility was completely demolished to four exterior walls and entirely reconfigured and expanded to include a training center; while the warehouse received additional interior racking and outdoor cantilevers, a new warehouse office and a warehouse bathroom, new lighting throughout and industrial grade fans. The exterior received new fencing, asphalt, security cameras, lighting, paint and signage.

“As part of our guiding principles at AGS, we are committed to investing in our people, our industry partners and leading edge technology. This building renovation project further demonstrated that commitment on all three points,” stated Tim Klei, AGS president and CEO.

Not only did AGS install EV charging stations for employees, but it included other strategic details to make employee productivity better such as adding adjustable Varidesks for all office employees, installing extremely large industrial grade ceiling fans in the warehouse, a new full



The AGS offices have undergone a complete renovation, including the addition of a training room and multiple warehouse and exterior upgrades.

service break room/kitchen, and a 1,000 square foot state-of-the-art training room where manufacturers can train AGS employees, and AGS can host customer trainings for distributors, contractors and engineers.

The entire building was also outfitted with products from AGS’s manufacturers to further use the space for product demonstrations. It features a variety of products from Legrand’s core lines including Wiremold floor boxes, Pass & Seymour’s Radiant and Adorne wiring devices, Wattstopper light-

ing control systems and shades, ONQ data enclosures and connectivity and a Nuvo AV System. Also highlighted are enclosures by Unity Manufacturing, office lighting by Elite Lighting and G Lighting, and exit and emergency as well as exterior lighting by Barron Lighting Group.

As part of this project, AGS also reworked its warehouse space to allow for more local product availability and to highlight a variety of lighting applications.

“We took advantage of this renovation by incorporating high bays from several of

our key lighting partners,” explained Principal and VP of Sales Lighting & Controls Michael Knoblock. “Customers can now come see fixtures from Atlas Lighting, Barron Lighting Group, Dialight, Elite Lighting and FSC Lighting in a real world warehouse application. We purposely alternated rows with lighting fixtures in our warehouse to better demonstrate and showcase the different brands we offer.”

Customers can visit AGS to view the various solutions and product offerings in use.

“At AGS we want to provide the most current solutions available in the electrical and lighting market, and our facility is now a real world application of that,” said Klei. “It’s our desire to support customers and manufacturers in every aspect of our business, which is why this renovation is so important. Customers can not only expect our team of experts to assist with their project needs every day, but now they can come and experience our product solutions being used by us in our office and warehouse. We are also truly thankful for our participating manufacturer partners that supported our remodel.”

AGS is an electrical and lighting manufacturer’s representative sales agency serving the Southwest for nearly 25 years. Currently the company employs 36 associates, led by Klei and Knoblock. With their corporate office and warehouse located in Phoenix, Ariz., AGS also has resident sales offices in Albuquerque, N.M. and Las Vegas, Nev.



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Free Webinar – Wed., Jan. 12 (11 am – noon)

Keep your packaged rooftop units and chillers working at peak performance. We’ll discuss proven practices for maintaining specific elements of RTUs and chillers, like coils, fan belts, compressors, economizers and more. Topics include: causes of HVAC failure, chiller maintenance, RTU preventive maintenance priorities, tips for air handlers and economizers. With a proactive approach, you can reduce operating costs while improving reliability and efficiency.

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Free Webinar – Wed., Jan. 26 (11 am – noon)

Take a deeper look at savings solutions for these end-use technologies – insulation, HVAC, lighting, and motors. Learn about top energy-efficiency opportunities (and their potential savings) for commercial businesses; there will be a special emphasis on restaurants, lodging, and food retailers.

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National Apprenticeship Week held in November

Jenn Klicker
Electric Times

The 7th Annual National Apprenticeship Week (NAW) took place Nov. 15-21. NAW is a nationwide celebration meant to highlight the successes, values, and influence of apprenticeship, which can boost the economy, advance racial and gender equity, provide promising and stable career opportunities for registered apprentices, and support underserved communities. The U.S. Department of Labor describes NAW as “an opportunity to highlight how registered apprenticeship, a proven and industry-driven training model, provides a critical talent pipeline that can help to address some of our nation’s pressing workforce challenges such as responding to critical supply chain demands and supporting a clean energy workforce, modernizing our cybersecurity response, addressing public health issues, and rebuilding our country’s infrastructure.”

Apprenticeship benefits both laborers and employers in equal measure. Since registered apprentices work full-time for a contractor while they attend related instruction, they earn while they learn. Without the debt many college students accrue while attending school, apprentices start their careers at the same time they start classroom instruction. What they learn behind a desk and during lab, they also learn during their on-the-job training. Depending on the trade, apprentices could become journeymen in their craft in less time than it takes some college students to earn their bachelor’s.

Employers benefit from apprenticeship as well. Apprenticeship programs are proven to help recruit and develop a skilled workforce, improve quality of work pro-



(Left) Jarrett Vest-AWC Electrical Apprentice; WECA Apprenticeship Program Remote Manager Keith Smart; Jose Rodriguez-AWC Electrical Apprentice; Lavanza Bell-AWC Electrical Program Student; Julie Koepf-AWC Director of Apprenticeship Programs; and Bruce Carroll-AWC Professor of Electrical and Solar Technologies take a moment to pose with some WECA gear during their tour of WECA’s new Electrical Apprenticeship Training Facility in Phoenix.

duced as well as productivity overall, reduce turnover costs and boost employee retention, and can provide opportunities for tax credits. Employers manage the on-the-job training apprentices receive and can be confident in the industry experts training their employees in the classroom, thus minimizing liability costs. Apprenticeship pro-

grams are developing a new generation of workers to become experts and journeymen in their fields.

To celebrate National Apprenticeship Week, many apprenticeship programs in Arizona hosted events. Some of the events were virtual, like the events hosted by Pima Community College, but several events

were held in person. Silent-Aire USA held a celebration on Nov. 15-19 at their facility in Gilbert, Ariz. and WECA (Western Electrical Contractors Association, Inc.) held their event on Nov. 17 at their Phoenix facility.

WECA hosted an open house to celebrate NAW. “We’re big participants in National Apprenticeship Week,” Michelle Gilkey, WECA’s director of marketing, learning, and product, explained.

Gilkey has been with WECA for 12 years and is excited about apprenticeship opportunities for anyone interested. “We love to get involved with NAW every year, and we were so excited for the open house. We want to spread the word about apprenticeship to everyone we can since it’s such an amazing opportunity.”

The open house started at 10:00 a.m. with 15 registrants who were given tours and demos in their labs.

WECA started their Arizona chapter in January of this year. “We’re eager to continue growing in Arizona and hope to expand to be like our locations in California,” Gilkey said. “We’re ready to meet the demand for apprenticeship in Arizona.” WECA’s Apprenticeship Program is a four-year program with two semesters/year. Their registered apprentices complete their 80 hours of related training during the day for two weeks and work for their member contractors outside of class. “We’ve had a great reception here,” Gilkey reports. “The State of Arizona has been amazing to work with, they’re super helpful and knowledgeable. It’s just been a very positive experience and we’re thrilled to be here.”

Open house

Continued from page 6

For Schneider, despite the current challenges of supply issues and worker shortages, he is optimistic about the business environment. “The industry is strong, and I think we are doing well.”

Like many of the contractors it serves, Lighting Unlimited is navigating through the worker shortage, and currently has a

least five positions open, from accounting to inside and outside sales and project manager. “Contractors are just swamped right now,” he said.

In terms of industry innovations, one of the major trends Schneider sees is the shift toward selectable products. “The biggest trend is everything is going to wattage and color selectable, he explained. “So, for

example, if you buy a 2 by 4 foot LED fixture, you can now change the color on it. You get a 3k, a 4k and a 5k in one box, there is just a selector on it.”

Schneider said the same features are being built into other LED products, such as HID metal halide replacements. “You have LED version and you can change it from a high pressure sodium color or metal halide

color, and you can change the wattage from 100, 175, or 250. Everything is going to that.”

The changes provide flexibility for customers, but also help consolidate stock, said Schneider.

The company will likely hold other events in the upcoming months at other locations in the Valley.

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SPRING 2022 COURSE SCHEDULE

ELC 103 - ELECTRICAL/MECHANICAL CALCULATIONS

Dates: Wednesdays, January 19 - May 4, 2022
Time: 6:00 p.m. - 9:10 p.m.
Location: Online

Fundamental calculations in arithmetic, algebra, trigonometry, descriptive geometry, economics, and profitability. Application of theories and formulas to solve design, installation, maintenance, and troubleshooting problems for residential, commercial and industrial electrical and mechanical systems.

Who Should Attend: This class will help journeyman, apprentices and contractors upgrade their residential skills.

ELC 119 - CONCEPTS OF ELECTRICITY & ELECTRONICS

Dates: Tuesdays, January 18 - May 3, 2022
Time: 6:00 p.m. - 9:10 p.m.
Location: GateWay Community College

Introduction to theory and principles of electric circuits, magnetism and electromagnetism including basic motors, transformers and generators. Use of basic measuring instruments. Overview of Ohm's and Kirchhoff's law and electronics in the modern world.

Who Should Attend: Entry level electrical workers, utility and distributor personnel or anyone wanting to understand the basics of electricity.

ELC 124 - INDUSTRIAL ELECTRICAL WIRING & CODES

Dates: Wednesdays, January 19 - May 4, 2022
Time: 6:00 p.m. - 9:10 p.m.
Location: ELA Training Center

Commercial electrical power distribution techniques of low voltage (under 600 volt) systems. Selection of electrical distribution components, single and three systems, one-line diagrams and conductor selection. System grounding, planning and over current protection.

Who Should Attend: This class will help upgrade the skills of those journeyman and apprentices who are competent commercial wiremen.

ELC 125 - COMMERCIAL ELECTRICAL WIRING & CODES

Dates: Thursdays, January 20 - May 5, 2022
Time: 6:00 p.m. - 9:10 p.m.
Location: Hybrid (Online & In-Person at GateWay Community College)

Commercial electrical power distribution techniques of low voltage (under 600 volt) systems. Selection of electrical distribution components, single and three systems, one-line diagrams and conductor selection. System grounding, planning and over current protection.

Who Should Attend: This class will help upgrade the skills of those journeyman and apprentices who are competent commercial wiremen.

ELC 218 - VARIABLE FREQUENCY DRIVES

Dates: Mondays, January 24 - May 9, 2022
Time: 5:50 p.m. - 9:15 p.m.
Location: ELA Training Center

Principles and operation of frequency controlled AC motor drives, including current source inverters (CSI), variable voltage inverters (VVI) and pulse width modulated inverters (PWM). Heating, ventilation and air conditioning (HVAC) applications along with energy savings, motor pump sizing and torque load calculation.

Who Should Attend: This class is designed for anyone interested in learning more about VFD's including electricians, engineers, facilities maintenance, and planners.

ONE-DAY NON-COLLEGE CREDIT SEMINARS

ELA 13 - NEC 2020 CODE UPDATE

DATE: Wednesday, April 6, 2022
COST: \$270 Members/\$300 Non-Members
INSTRUCTOR: Marc Ramirez
TIME: 9:00 a.m. - 5:00 p.m.
LOCATION: ELA Training Center, 2702 N. 3rd St., Ste. 2020, Phoenix, AZ 85004

Note: Course fees include copy of the NEC 2020 Soft Cover, handouts, breakfast, and a light lunch. (\$50 off for those with Code Books)

Description: This course will cover modifications in the NEC and discuss why the rule changes were made. Topics also include safety aspects of the NEC changes, conflicting rule changes, how to apply the changes to real world projects and how the rule changes affect overhead costs.

Who Should Attend: Highly recommended for Facility Maintenance Technicians, Building Operators, Electricians & Supervisors.

ELA 70 - ELECTRICAL SAFETY FOR COMMERCIAL / INDUSTRIAL FACILITIES

DATE: Wednesday, April 13, 2022
COST: \$270 Members/\$300 Non-Members
INSTRUCTOR: Marc Ramirez
TIME: 9:00 a.m. - 5:00 p.m.
LOCATION: ELA Training Center, 2702 N. 3rd St., Ste. 2020, Phoenix, AZ 85004

Note: Course fees include copy of the NFPA 70E 2021 book, handouts, breakfast, and lunch.

Description: This full-day class will cover an overview of NFPA 70E including: Arc Flash & Arc Blast Hazards, Flash Protection & approach boundaries, Hazard Risk Categories & selection of appropriate PPE. Lockout Tagout procedures, general Electrical Safety related to electricity in Commercial and Industrial facilities. Recommended Safety practices and OSHA Codes.

Who Should Attend: Highly recommended for Facility Maintenance Technicians and Building Operators, Electricians, HVAC technicians and their Supervisors.

Register online <http://edu.elaz.org> or contact us for more information.
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The Electric League of Arizona education department and the Arizona Heat Pump Council present an integrated, HVAC and Electrical maintenance program to meet the unique training need of facility maintenance departments. Graduates of this program receive the "Facility Maintenance Master Technician" designation.

About the Program:

This program has been designed by industry educators and practitioners, associated with the Electric League of Arizona's education department and the Arizona Heat Pump Council. This session will be taught by one of the League's electrical instructor and a lead instructor for the Arizona Heat Pump Council education program. Upon completion of this 16 week 2 nights a week program, successful students will receive a Certificate of Completion and Facility Maintenance Master Technician Patches.

Course Coverage

HVAC Curriculum:

The HVAC training will include a comprehensive review of refrigeration system fundamentals, refrigerants, HVAC equipment, air movement and measurement, air quality, residential & commercial systems, air & water source heat pumps.

- Refrigeration Theory I
- Refrigeration Theory II
- Refrigeration Components
- Introduction to Refrigerants
- Charging & Piping
- A/C Control Systems I
- A/C Control Systems II
- Review and Quiz
- Refrigerators and Freezers
- Residential Systems - Air Conditioning
- Residential Systems - Heat Pumps
- Commercial Systems
- Air Quality and Distribution (Air Flow)
- HVAC Systems Troubleshooting
- Servicing Commercial Systems
- Review & Final Exam

Electrical Curriculum:

The electrical training will include a comprehensive review of basic electrical fundamentals; practical installation, operation, maintenance, and troubleshooting techniques, with an emphasis on electrical safety procedures.

- Concepts of Electricity I
- Concepts of Electricity II
- Basic Circuitry I
- Basic Circuitry II
- Basic Circuitry III
- Commercial & Industrial Buildings Practical AC Circuits
- Commercial & Industrial Practical AC Power Delivery
- Building Systems Control Systems
- Electrical Codes and Standards
- Basic AC/DC Rotating Electrical Machinery
- Variable Frequency Drive Systems I
- Variable Frequency Drive Systems II
- Electrical Power Quality Commercial & Industrial
- Electrical Troubleshooting I
- Electrical Troubleshooting II
- The Importance of Electrical Safety

Contact the ELA Institute
for information at 602-263-0115

Dates: August 10 - December 9, 2021

Tuesdays & Thursdays • Time: 5:30pm - 8:20pm

HVAC Classes - Tuesdays • Electrical Classes - Thursdays

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BUILDING OPERATORS' CERTIFICATE PROGRAM

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The ELA Institute for Facility Management Education presents an educational program leading to a certificate in Building Operations. The certificate will be of most benefit to managers with total responsibility for multi-facilities, as well as those with single facility responsibility.

FME 101

HVAC Fundamentals in a Commercial/Industrial Facility

Course Description: A discussion of commercial systems, chiller systems, and A/C control systems in a modern industrial setting.

Course Content: A discussion of types of systems and controls working with application sequences, energy efficiency, diagrams and specific HVAC Controls.

FME 102

Airflow Dynamics for the Commercial/Industrial Facility

Course Description: A thorough understanding of airflow dynamics can enable you to uncover and resolve system problems.

Course Content: An overview of what causes most airflow related problems and how they can be prevented.

FME 103

HVAC Codes and Safety for the Commercial/Industrial Facility

Course Description: A discussion of local and national health, safety, energy and environmental codes as they relate to the HVAC system in a Commercial/Industrial Facility.

Course Content: An overview of codes, standards and specifications and how they apply in a Commercial/Industrial Facility.

FME 104

Electrical Codes and Standards for the Commercial/Industrial Facility

Course Description: Electrical, energy management and related codes that facility managers must know.

Course Content: Compliance with the most important maintenance related codes and their application to an energy efficient building.

FME 105

Design & Operation of Commercial Chilled Water Systems

Course Description: This class provides an overview of the design and operation of Building Chilled Water Systems including piping system design and unit components, their application to the facility.

Course Content: Piping system/Equipment

FME 106

Electrical Safety for the Commercial/Industrial Facility

Course Description: A discussion of commercial facility safety practices as it relates to electrical systems.

Course Content: An overview of safety practices related to electricity and how it relates to the Commercial/Industrial Facility.

FME 107

Lighting Fundamentals and Efficiency for the Commercial/Industrial Facility

Course Description: A broad-based discussion of lighting fundamentals and efficiency

and how they're applied to a Commercial/Industrial Facility.

Course Content: An overview of the Lighting Industry.

FME 108

Power Quality for the Commercial/Industrial Facility

Course Description: The basics of important, "Need to know" power quality issues in your facility.

Course Content: An overview of what causes most Power Quality related problems and how they can be prevented.

FME 109

Indoor Air Quality for the Commercial/Industrial Facility

Course Description: The purpose of this course is to familiarize the attendees with Indoor Air Quality.

Course Content: This course will cover how to identify and understand air quality issues, and how this impacts the facility.

FME 110

Energy Conservation Techniques

Course Description: The use of energy in commercial buildings and how to identify and prioritize conservation opportunities.

Course Content: An overview of the basics of energy accounting, evaluation of fuel options, operation and maintenance strategies to improve efficiency, and energy management planning techniques.

FME 111

Energy Audit

Course Description: The essentials that a building operator should know about how to measure the energy performance of their facilities.

Course Content: An overview of where your facility uses energy and how your facilities' energy use compares to your competition.

FME 112

Direct Digital Controls

Course Description: An introduction to the application of Direct Digital Controls (DDC) to operating a building's temperature control system.

Course Content: Topics will include:

- The ability of the system to process data
- Input & output types, transducers, variable frequency drive (VFD) theory, communication protocols (LON & BACnet), programming vs. configuring controllers
- Workstation basics
- How to make the controls act like an Energy Management System (EMS).
- Specific manufactures will not be covered, only the overall theory of how these systems operate.

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Arizona Public Service, Facilities Administrator Sr.

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For more information, please contact the:

ELA Institute

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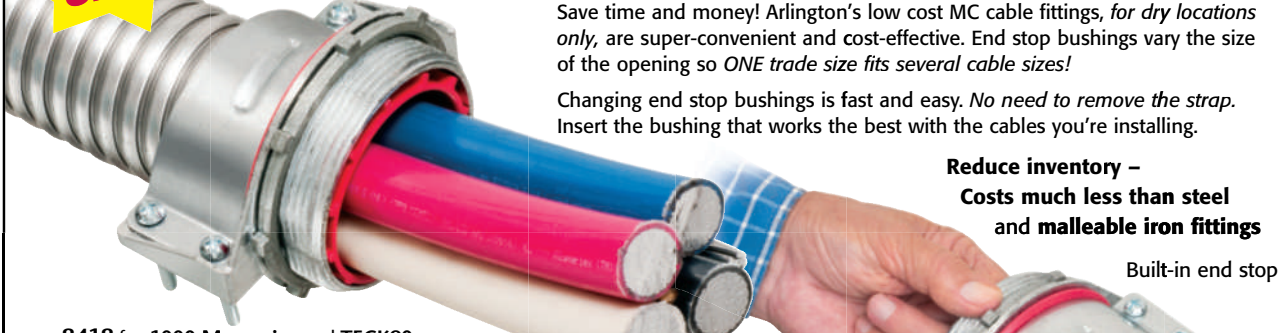
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8413	1 1/4"	1.360	1.360	1.050	1.250	2/0-3, 2/0-4, 3/0-3
8414	1 1/2"	1.360	1.770	1.250	1.590	2/0-4, 3/0-3, 3/0-4, 4/0-3, 4/0-4, 250-3, 250-4
8415	2"	1.700	2.200	1.550	2.050	250-4, 300-4, 350-3, 350-4, 500-3
8416	2 1/2"	2.100	2.700	1.950	2.400	500-3, 500-4, 600-3, 600-4, 750-3
8417	3"	2.500	3.300	2.350	3.000	600-4, 750-3, 750-4
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