WELDING JOURNAL

SEPTEMBER 2026



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LAS VEGAS 2026 PREVIEW

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FABTECH 2026 Highlights Automation's Growing Role



Nick Drake
Vice president of corporate operations, Gullco International Ltd.

Every year, FABTECH serves as a snapshot of where metal fabrication and welding manufacturing are heading. The scale of the event reflects the pace of change within the industry: larger automation exhibits; more advanced robotic systems; increasingly connected production technologies; and a growing emphasis on throughput, consistency, and labor efficiency.

By the time FABTECH 2026 opens its doors, manufacturers will arrive with familiar pressures weighing heavily on their operations. Skilled labor gaps continue to affect nearly every segment of the fabrication industry. Delivery timelines remain compressed. Quality expectations have become less forgiving while production volumes continue to rise. Across industries, automation has become a business necessity.

Yet amid the excitement that surrounds new technology introductions and equipment demonstrations, many manufacturers are beginning to recognize that purchasing automation equipment is often the easiest part of the process. Successfully implementing it is something else entirely.

That distinction is reshaping how manufacturers approach trade shows like FABTECH. Buyers are no longer evaluating machines based on specifications and performance claims. Increasingly, they are evaluating the capabilities of the companies standing behind those systems, particularly their ability to engineer, integrate, support, and scale automation within real production environments.

Today's automation options range from portable mechanized welding systems to fully programmable platforms capable of handling complex welds with minimal operator intervention. The challenge, however, lies in understanding which automation solutions fit the realities of a particular operation.

Many manufacturers discover too late that automation cannot simply be dropped into an existing workflow. Weld orientation, part fitup variability, operator familiarity, material-handling constraints, floor-space limitations, and production sequencing all influence whether an automation investment ultimately succeeds. This is why the role of the integration partner has become increasingly important throughout the industry.

At FABTECH 2026, some of the most valuable conversations may not happen during equipment demonstrations but rather during discussions about implementation strategy. Manufacturers are placing greater emphasis on suppliers capable of assessing production requirements, recommending practical automation approaches, and engineering systems aligned with long-term operational goals.

"At FABTECH 2026, some of the most valuable conversations may not happen during equipment demonstrations but rather during discussions about implementation strategy. Manufacturers are placing greater emphasis on suppliers capable of assessing production requirements, recommending practical automation approaches, and engineering systems aligned with long-term operational goals."

The financial implications are significant. Manual welding processes typically achieve arc-on efficiency of around 25%, while fully automated systems can operate at efficiencies of 80–90%. The productivity gains associated with those improvements can dramatically alter throughput, labor allocation, and profitability.

Manufacturers implementing automated welding systems often see secondary operational improvements that prove equally valuable over time, such as reduced rework and improved weld consistency.

An automation system that operators struggle to use, maintain, or adapt can quickly become an expensive bottleneck rather than a productivity asset. Conversely, properly integrated automation creates operational flexibility that extends beyond the original project scope. Semiautomated and fully automated systems can reduce dependency on highly specialized labor while allowing manufacturers to expand into additional applications and production opportunities.

Instead of focusing exclusively on the newest technology, buyers are asking more practical questions: Is the system adaptable to existing workflows? What engineering support is available during implementation? Can the solution scale with future production growth? How will operators be trained? What happens when production requirements change?

These questions reflect a maturing automation market in which long-term success depends less on the equipment and more on the expertise behind implementation. FABTECH 2026 will showcase some of the industry's most advanced welding and fabrication technologies. Automation systems will continue to become faster, smarter, and more capable. But for many manufacturers, success will depend on an experienced partner to help implement, integrate, and support that technology long after the trade show ends. WJ

POINT OF VIEW

BY ANDREW BROWN

THE MODERN-DAY WELDER RETENTION PLAYBOOK

A practical look at why welding employers lose promising candidates and what they can do differently



Hands-on exposure helps students and career changers understand the realities of welding before choosing a pathway.

The U.S. welding workforce challenge is often described as a labor gap. A more accurate description is a pipeline failure driven as much by perception and timing as by demographics.

The effects are already visible across industry. Infrastructure projects face delays, manufacturing timelines grow tighter, and maintenance backlogs continue to build. What might seem like a workforce issue on paper has become an operational concern in practice.

AWS projects that 320,500 new welding professionals will be needed by 2029 (*weldingworkforcedata.com*), requiring roughly 80,000 new entrants each year to meet demand and replace retirees. Employers feel this daily: Job postings attract applicants, but only a fraction are qualified, fewer show up for interviews, and many new hires leave within the first six months.

Many companies say they can't find welders when the truth is they can't keep the ones willing to try. In many cases, companies ask for three to five years of experience for roles meant to be entry points, filtering out candidates who have the soft skills, work ethic, and safety mindset but not yet the technical experience.

What Younger Workers Want

Gen Z (roughly ages 13–28) evaluates careers differently than previous generations. They expect

clarity early: what the work looks like, how progression happens, and whether support shows up from day one.

When the message is still "pay your dues" or "you'll be set in five years," hesitation shouldn't be surprising. Those phrases lack context and immediacy, and younger workers have too many alternatives to commit blindly.

Most employers and educators are doing the best they can within systems they inherited. The problem is that many of those systems were built for a labor market that no longer exists.

When expectations aren't clear early, interest fades — not because welding lacks value, but because the path into it feels uncertain.

Recruiting vs. Retention

Across two decades working alongside welders, shop owners, educators, and manufacturers, I've seen the same lesson play out repeatedly. Organizations that consistently attract and retain younger welders tend to focus on the fundamentals early, providing training, mentorship, and support when new hires need them most. By contrast, organizations that struggle often depend too heavily on recruiting efforts while delaying the support that helps people stay and succeed. More job ads alone won't fix an onboarding process that isn't working.

A Five-Step Playbook for Retention

The five steps below reflect a practical order of operations used by organizations that hold onto people rather than just hire them.

1 AWAKEN: CREATE RELEVANCE QUICKLY. Initial exposure matters. If students or career changers don't see how welding connects to the world they live in, attention is lost almost immediately. Effective outreach isn't a lecture or a labor-market statistic. It starts with relevance, showing how welding supports infrastructure, energy, transportation, and manufacturing. The goal here is to build interest.

2 EXPLORE: MAKE IT TACTILE AND IMMEDIATE. Exploration must be hands-on. Prolonged theory without physical interaction is one of the fastest ways to lose potential entrants. Whether through shop visits, trailers, personal protective equipment demonstrations, or supervised tool use, hands-on exposure lets people experience the work before committing to it. Some opt out — which is a success, not a failure.

3 CHOOSE: CLARIFY PATHS, NOT JUST POSSIBILITIES. Many people leave the pipeline because they can't see where welding leads. Choice requires clarity. That means explaining real paths — for example, fabrication, structural work, inspection, maintenance, automation support, and leadership — and how progression happens over time.

4 PREPARE: MENTORSHIP STARTS IMMEDIATELY. This is where many employers unintentionally lose the game. Mentorship is often delayed until a new hire proves themselves; in reality, most people decide whether they will stay within the first week, even if it takes months for that decision to show up as turnover. Early mentorship directly impacts weld quality, safety habits, and rework. New welders without guidance are more likely to develop poor habits, miss inspection criteria, or disengage before reaching proficiency, increasing costs, risks, and frustration on both sides.

Structured mentorship during onboarding bridges the gap between classroom learning and real-world application. It reinforces standards early and signals that the individual belongs.

That also means doing the legwork upfront. Not every experienced welder should be a mentor, and filtering out the wrong fits matters just as much as selecting the right ones. If a company consistently loses welders within six months, the issue is rarely a lack of recruiting volume.

5 ELEVATE: TURN EXPERIENCE INTO LEADERSHIP. Retention improves when people see a future beyond entry-level work. A simple approach is a buddy-to-mentor progression: A second-year welder helps onboard a new hire for the first few weeks, walking through shop flow, safety expectations, and basic process checks, with a lead welder available as backup. It creates an early leadership opportunity while reinforcing accountability and pride in workmanship. Teaching reinforces skill, builds confidence, and strengthens culture. Knowledge is transferred instead of lost.

Bridging Education and Industry

Education and industry perform best when they operate as connected systems. Public career and technical education programs rely on industry input to align curriculum, equipment, and outcomes with local workforce needs. When employers engage, even a few times per year, alignment improves and graduates arrive better prepared.

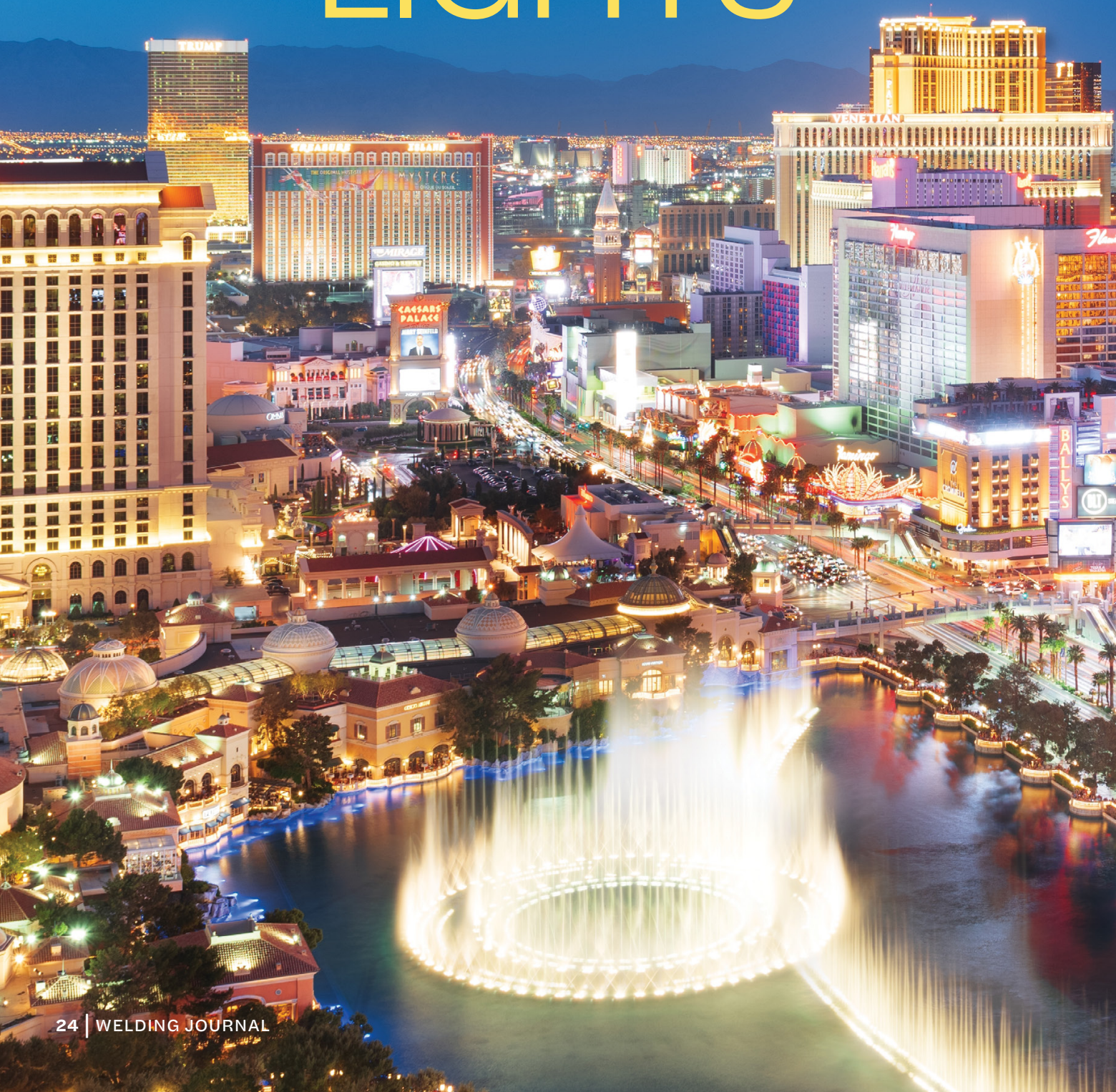
Conclusion

The welding workforce isn't disappearing because the work lacks value. It's being filtered out by pathways that no longer match how people actually enter and grow in the trade. If the industry wants different outcomes, it must change the order of operations: make welding visible earlier, provide hands-on exploration, clarify career paths, invest in early mentorship, and elevate experience into leadership. The next generation is watching — not to see what the industry says, but to see what it actually does. WJ

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BY ROLINE PASCAL

Behind Vegas's BRIGHT LIGHTS





HOW WELDING HELPS SHAPE THE ENTERTAINMENT CAPITAL OF THE WORLD

Few places showcase spectacle quite like Las Vegas. Visitors see dazzling lights, world-class entertainment, and iconic resorts and casinos. What they rarely see is the skilled work that goes into those attractions.

While Las Vegas is known as the Entertainment Capital of the World, it is also home to a growing manufacturing and construction sector that relies on a steady pipeline of skilled tradespeople. Over the past year, Southern Nevada ranked first in manufacturing job growth among the nation's 30 largest metropolitan areas, increasing its manufacturing workforce to more than 32,000 employees as the region continues diversifying beyond its traditional tourism economy (Ref. 1).

For welders and fabricators, Las Vegas looks very different than it does for the millions of visitors who travel there each year. Tourists see dazzling resorts, sold-out concerts, and world-renowned attractions. Welders see architectural metalwork; commercial kitchens; heating, ventilation, and air-conditioning (HVAC) systems; structural steel; and fabrication projects that keep those venues running. Behind some of the city's most recognizable landmarks is a network of welders whose work often goes unnoticed.

The Welding behind the Strip

Ask most people what welding looks like in Las Vegas, and they'll likely picture decorative metalwork or perhaps fabrication tied directly to casinos. According to Steven Vantine, facilities manager and instructor at Sheet Metal Local 88 JATC, the reality is much broader.

"One thing people don't realize is how specialized our trade is. You hear 'sheet metal' and you think one thing," he said. "Actually, we've got sheet metal workers that are specialized in service who know nothing about welding, and vice versa. It's a great program because you can choose what you want to specialize in."

That variety is reflected throughout Southern Nevada. Local 88 members have contributed to projects, including Sphere, Allegiant Stadium, T-Mobile Arena, and the ongoing Hard Rock development, performing work that extends far beyond what visitors see.

Discussing Sphere, Vantine quickly pointed out that visitors see only a fraction of the work involved.

"Our members installed all the architectural panels of the Sphere, all of the stainless steel inside the Sphere, all the restaurants, all the kitchens, and all the ductwork inside the building," he said.

The same goes for Allegiant Stadium, with Vantine noting more of Local 88's work on the structure: "All the architectural panels on the outside, and then everything inside, the ductwork and kitchen equipment."

Those projects highlight the often-unseen role welding plays in the city's entertainment industry. While guests admire the city's skyline, welders are responsible for many of the systems that allow those facilities to function every day.

One of the largest sources of welding work is something far less glamorous. When asked what industries create the greatest demand for sheet metal workers in Las Vegas, Vantine didn't hesitate.

"Definitely HVAC," he said. "Because it's so hot out here."

The answer may seem obvious, but it underscores how critical welding and fabrication are to the region. The desert climate creates constant demand for HVAC systems. Hidden above ceilings and behind walls are miles of fabricated ductwork that keep occupants comfortable despite Southern Nevada's extreme temperatures.

That diversity is what surprises people most about welding in Las Vegas. The trade extends far beyond casinos, offering careers in HVAC, architectural sheet metal, fabrication, detailing, service, and building information modeling (BIM).

Las Vegas also has another characteristic that helps sustain welding careers: The city rarely stands still.

Las Vegas continually renovates resorts, expands entertainment venues, updates restaurants, and builds new attractions. At the same time, manufacturing and industrial employers are investing in Southern Nevada as the economy diversifies beyond hospitality and gaming, creating opportunities for skilled trades across multiple sectors (Ref. 1).



Under Sphere's iconic exterior are the architectural panels, stainless steel, kitchen equipment, and HVAC ductwork installed by skilled sheet metal workers.

Building the Workforce

Building the workforce to support Southern Nevada's continued expansion requires more than new projects. It requires skilled workers ready to meet industry needs, and Las Vegas offers more than one pathway into the profession.

For Local 88, that begins with a four-year apprenticeship that combines classroom instruction with paid, on-the-job training. Apprentices attend classes twice a week, learning welding fundamentals, sheet metal fabrication, layout, and fitting before progressing to advanced structural welding and welder performance qualification testing under AWS D1.1, *Structural Welding Code — Steel*, and D9.1, *Sheet Metal Welding Code*.

Not every welder, however, enters the profession through a traditional apprenticeship.

Across town, the Las Vegas Institute of Welding (LVIW) prepares students through a different training model built around rapid workforce entry and close collaboration with local employers.

Certified Welding Instructor Eric Roper said maintaining that connection requires constant communication with employers.

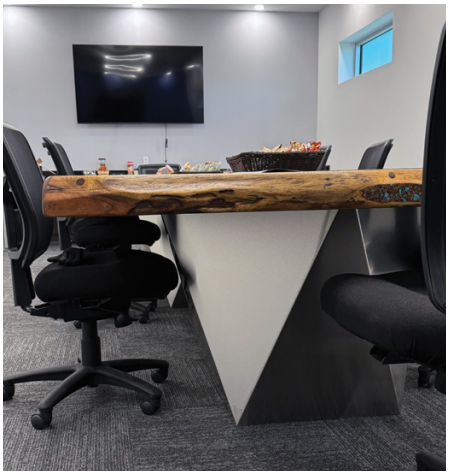
"We're talking with industry," Roper said. "If they're using a process or they're changing something, we want to know because that's what we need to be teaching."

That employer-driven approach is central to LVIW's mission. Founded by Roper and wife Gabrielle "Brie" Roper after years in Southern Nevada's fabrication and metal-finishing industry, the school was created to address a growing need for qualified welders while providing career opportunities for people who might otherwise struggle to find employment.

In addition to welding instruction, LVIW emphasizes job readiness and works closely with employers to place graduates into careers. For Eric Roper, success isn't measured by how many students complete the program; it's measured by how many begin successful careers in welding and fabrication.







Before working on major Las Vegas projects, Local 88 apprentices hone their skills by fabricating hands-on projects, such as an offset smoker with a 10-gauge cold-rolled steel body and a 1/4-in. steel firebox (top) and a conference table base fabricated from 14-gauge 304 stainless steel with a No. 4 finish (middle and bottom).



LVIW graduate Marco (front), who completed the program in 2023, works through a union apprenticeship and frequently returns to the school to practice and share his experiences. He is pictured with Mike Simmons, Kepa Kapuni, and Certified Welding Instructor Eric Roper.

Preparing Welders for Tomorrow

While the fundamentals of welding remain the same, the tools and technology used to teach the trade continue to evolve.

When Vantine completed his apprenticeship, equipment available to students looked much different than it does today.

"Our school, we have a lot of Lincoln Electric machines," he said. "We use the MP 262s, the multiprocess machine. They have pulse capability. We love them."

The partnership with Lincoln Electric allows the training center to regularly update its equipment.

"They take care of us," Vantine said. "They swap out our machines every year."

Beyond updated welding power sources, Local 88 has also become a training hub for instructors from other sheet metal locals across North America. As part of that effort, new technologies are making their way into the classroom.

"Our International uses our facilities like a training hub," Vantine explained. "Now they're introducing laser beam welders. That's getting big right now. A lot of the kitchen equipment shops are running those because they're real fast."

Local 88 isn't the only training provider adapting to new technology.

At LVIW, Roper said preparing students for today's workforce means continually evaluating employer needs and updating training as new processes and equipment become more common.

Success beyond the Classroom

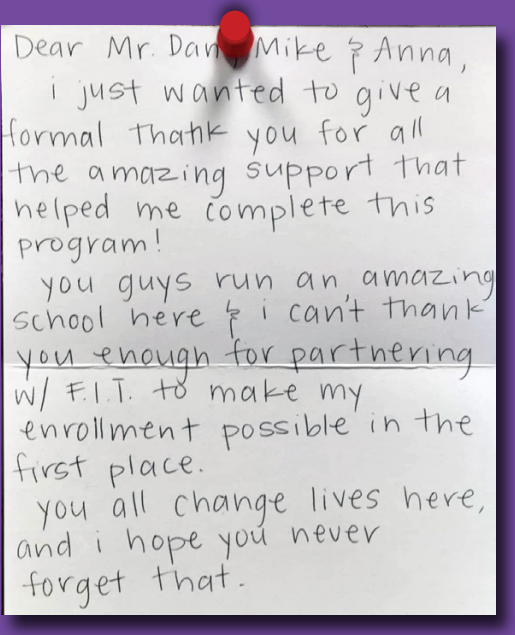
For the Las Vegas Institute of Welding (LVIW), success is measured by what happens after students leave the classroom.

Certified Welding Instructor Eric Roper said several graduates have advanced well beyond entry-level positions since the school began operating nearly six years ago. Some are now leading union steel crews while others have used their experience on major Las Vegas projects to pursue work elsewhere.

One graduate found employment on Sphere and made a strong enough impression that the company later specifically requested him for an international infrastructure project.

"You can go to school for ten years, but if you can't get a job, it doesn't mean anything," said Roper. "We're really looking for those hard skills — the meaningful skills that get them into jobs quickly."

LVIW also allows graduates to return for additional practice when a new position requires another welding process, giving them an opportunity to build on their skills as their careers progress.


Dear Mr. Dan, Mike & Anna,
i just wanted to give a formal thank you for all the amazing support that helped me complete this program!
you guys run an amazing school here & i can't thank you enough for partnering w/ F.I.T. to make my enrollment possible in the first place.
you all change lives here, and i hope you never forget that.

A letter from a former student reflects the lasting impact the Las Vegas Institute of Welding has had on graduates pursuing careers in the welding industry.



Eric Roper welds components on the roof of the Trump tower in Las Vegas, Nev.

That flexibility is especially important as automation, artificial intelligence, and advanced welding technologies are reshaping manufacturing and fabrication. While students still need a strong foundation in welding fundamentals, instructors recognize that today's graduates will likely use equipment that continues to evolve throughout their careers.

"Welding keeps changing," he said. "You have to keep learning." That philosophy extends beyond graduation. Former students are encouraged to return to learn additional processes as technologies evolve and their careers progress.

"We always tell students, 'Come back,'" Roper said. "If you want to learn another process, come back. We don't want you to have to buy another class."

More Than Technical Skills

Although equipment keeps advancing, both instructors believe employers still value the same personal qualities they always have.

For Vantine, the most important characteristic isn't something that can be taught in a classroom.

"I would say passion for your trade. Craftsmanship," he said. "You can't teach somebody work ethic."

He believes students who genuinely care about their craft quickly distinguish themselves in the workplace.

Roper believes that mindset is just as important as technical ability. While welding can provide rewarding careers, he emphasized that students should understand what the profession demands.

"It's hands-on work," he said. "But if you're willing to learn and keep learning, there are a lot of opportunities . . . I can teach you how to weld. I can't teach you how to wake up in the morning."

Conclusion

For both Local 88 and LVIW, the goal extends beyond helping students earn certifications. It's about preparing them for long-term careers in an industry where opportunities continue to grow. Manufacturers across Southern Nevada report demand for skilled workers as the region's manufacturing sector expands, making workforce development an increasingly important priority (Ref. 2).

Whether graduates find themselves fabricating stainless steel commercial kitchens, installing HVAC systems in a new resort, welding structural components, or supporting one of the region's many manufacturing operations, they become part of the workforce helping shape Southern Nevada's future.

The next time visitors admire the gleaming exterior of Sphere, attend a concert at T-Mobile Arena, or walk through a newly renovated resort, they'll likely never notice the miles of ductwork overhead, the stainless steel commercial kitchens behind restaurant doors, or the architectural metalwork built into the city's skyline. That's the nature of welding in Las Vegas. Much of the work remains hidden. But without it, the city wouldn't shine quite as brightly. WJ

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