



Think Big in a Tight Labor Market

An electronic handbook
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Asian Contractor Association
4201 Ed Bluestein Blvd.
Austin, TX 78729
www.acta-austin.com
asiancontractor@gmail.com
Tel: 512-926-5400



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3 Methods for Finding More Skilled Labor

Growth in construction over the past 5 years was capped off by a record-setting 2016, which saw United States spending reach nearly \$1.2 trillion—a 4.5-percent increase over 2015, according to a report by JLL Research. The outlook for 2017 is even more bullish, according to Wells Fargo’s Construction Industry Forecast 2017, “with significant talk in all areas of the need for increased infrastructure spending. The industry made progress in 2016 with the passage of the long-term highway funding bill and the momentum felt by executives, so 2017 could prove to be the year in which all participants in the industry prosper.” However, for many companies, the ongoing labor shortage in skilled trades could be an obstacle.

1. Understand the Demand

Nearly 70 percent of construction firms report they are having a hard time filling the hourly craft positions that represent the bulk of the construction workforce, according to a 2016 survey by the Associated General Contractors of America. Firms in certain geographic areas, such as the Midwest (77 percent) and the South (74 percent), report having even more difficulty.

An article in *The Cornerstone*, a construction publication for workforce development professionals, notes that the staffing shortage is intensifying as other industries compete for the same limited pool of craft professionals, and urges the industry to invest in workforce development and become an industry of choice. Whether that will happen via additional apprenticeships, vocational schools and training programs is unknown, and it won’t happen overnight. To take advantage of the opportunity for your company to expand, you need to overcome the labor hurdle in the short-term.

2. Cast a Wider Net

Even in major metropolitan markets, it can be difficult to find the volume of workers with the right skill sets you need to complete large, high-revenue projects. Flexibility points toward a scalable workforce. Even if the talent does exist, it might not exist in the same location as the work that needs to be completed. Broadening the geographic range of your talent search, with the option of bringing in out-of-town workers to get your local work completed, makes it easier to find the best candidates to choose from. Before you say no, know that other companies are already doing it.

A CareerBuilder search for full-time traveling construction jobs in April returned more than 2,500 listings placed by a variety of builders and other companies. So ask yourself—can you build travel into your pricing? Using local labor is always the first choice, but what if the alternative is missing a project timeline or budget? It could be worth it from a return-on-investment (ROI) standpoint, especially for high-demand skill sets. A recruiting firm that has a deep pipeline of candidates

and a national network of local offices can help ensure that you have access to the broadest range of locations, candidates and skill sets.

Once you have gone outside your market to pursue the best talent resources, you have also opened the door to expanding the geographic nature of the projects your business can profitably pursue. Put another way, when the accessibility of talent is less of an issue, you are free to compete for work in a variety of other markets and position yourself for future work.

3. Pursue Flexible Options

Although you may specifically be looking for highly experienced talent, consider whether you can be flexible with the composition of your team’s staffing. Can you build a team that incorporates fewer journeymen and more apprentices or helpers? In addition to addressing your current staffing need, you’ll be providing crucial experience to build your own team of future experts.

You may not have the time to personally handle the process of sourcing, interviewing and hiring a work team of diverse expertise and skill sets to complete the projects you are working on currently. Consider using external resources that find not only individual candidates, but also have experience in assembling teams of all configurations.

Tackling the talent shortage is all about creative solutions. Seeking nonlocal talent and being flexible with the composition of your workforce can allow you to secure and fulfill new business, as well as widening your company footprint and helping you compete for business in new regions. The opportunity is there now, so make sure your company is ready to take full advantage.

About the Author: Ed Gruss is Aerotek’s director of divisional operations, leading the E&E division, which provides both the management and craft labor talent needed to support construction projects from concept to completion, including engineering, design, construction, restoration and disposal. Contact Gruss at egruss@aerotek.com or 410-657-3228. Visit aerotek.com.

How to Find Savings in Industry Equipment Trends

Rising economic activity fuels demand for construction, agriculture & industrial equipment

Increasing activity in three key economic sectors—construction, agriculture and manufacturing—is driving demand for a wide variety of heavy vehicles and industrial equipment in the United States marketplace.

However, due to an uncertain and competitive business environment, buyers and sellers alike are concerned about getting the most value out of every transaction. Thus, a growing number of auction participants are utilizing online sources to find better deals on heavy equipment.

As a seller on an online platform, here's what you need to know about these B2B sectors and how to capitalize on current economic trends to increase your bottom line.

Strong Construction Growth Raises the Challenge of Inflation

Supply and demand are both strengthening in online construction equipment auctions, driven by expectations of continued growth in the sector. Total U.S. construction spending in 2016 exceeded \$1.1 trillion, an increase of 4.5 percent from 2015. [Analysts expect growth to remain strong](#), noting that architectural billings, a key indicator of upcoming building activity, surged in early 2017.

Construction economist Ed Zarenski predicts construction spending to [increase about 6](#) percent in 2017, but construction inflation will also increase by at least 4 percent—producing net volume growth of up to 2 percent. In his analysis of industry spending from Q1 2014 to Q4 2016, Zarenski emphasized the importance of considering inflation when examining trends in construction activity. During that 3-year period, total annual construction spending increased 22 percent from \$960 billion to \$1.17 billion. However, after adjusting for inflation, construction volume only increased by 9.4 percent.

While economic activity increases, costs will also rise rapidly over the same period. To ensure margins also increase, it is critical for buyers to find ways to keep costs low by getting the best available price. Many buyers turn to auctions to find those unbeatable deals to stay ahead of their competition.

U.S. Agricultural Producers Benefit from Growing Trade Surplus

Finding the right agricultural equipment at the right price is often a challenge, especially at a time when American agricultural exports are growing. [According to the U.S. Department of Agriculture](#), exports totaled almost \$130 billion in 2016—and exceeded \$1 trillion over the 8 years spanning 2009 to 2016.

In 2017, U.S. agricultural exports are expected to reach \$134 billion, driven by growth in dairy, livestock, grains and corn. At the same time, imports are expected to decline by \$1 billion—widening the [U.S. agricultural trade surplus](#) to \$21.5 billion.

Strong growth in export volumes will keep American farmers, ranchers and other agricultural producers busy in 2017—and necessitate repairs, replacements and other investments in machinery.

Leveraging Online Platforms to Find Savings

As the demand for equipment rises, the associated rise in cost due to inflation can lead to sticker shock for many buyers. Given the need to stay ahead of rising costs,

the secondary market will continue to benefit—buyers have the capital and urgency to make purchases, but do not want to pay top dollar for new machines.

Buyers also turn to the internet as a valuable resource for research and price comparison. When it comes time to sell your equipment, it is important to provide all pertinent details of an item. When comparing two similar items across platforms or auctions, the buyer will be more apt to purchase an item with a full description, photos and disclosures, rather than taking a chance on an item with unclear details. Providing a thorough description can be the difference maker in a purchasing decision.

In the age of instant purchase and 2-day shipping, the culture around buying online has shifted. Providing strong customer service, fast shipping and order processing can turn a one-time buyer into a repeat customer. Work with an online platform that offers top notch customer support and a sophisticated risk management system that provides consistency among sellers. Remember, there is a special kind of relationship all sellers can build with their online customers. The most successful sellers are those who are dedicated to meeting buyer expectations. Providing consistent, fair and timely service is a hallmark to exceptional sellers. Be sure you work with an online platform that shares this core value.

About the Author: Ryan Downs is the president and CEO of Proxibid, an online platform that offers customer service and support, and a robust risk management system, designed to ensure buyers and sellers are safe when transacting online. Since joining Proxibid in August 2010, Downs has been responsible for driving the strategy, vision and mission for the company. Downs joined Proxibid from eBay, where he served most recently as senior vice president of worldwide operations for PayPal, eBay's payments division. Visit proxibid.com.

5 Innovations Revolutionizing the Construction Jobsite

How new technology could vastly improve the way & speed at which your team operates

New advances in technology, particularly on the digital side of the spectrum, can do a lot to drive revenue and cut costs. Innovative techniques and processes for project management, new software solutions, the internet of things (IoT) and alternative materials are all making a push into mainstream construction. These opportunities aren't just science fiction anymore; they're valuable technologies moving construction into the 21st century. The following article explores some advances that are already on jobsites today.

1. Virtual & Augmented Reality

No longer something solely associated with gaming, virtual reality (VR) is finding a home in the construction industry. New 4D virtual reality modelling allows clients to be immersed in the environments of their planned construction projects during the planning and design stages. This ability to walk the key

stakeholders through a fully interactive experience prior to finalizing the design can ensure plans fully meet client expectations.

In construction, 4D environments can allow companies to plan every aspect of the project, improving everything from safety to efficiency, as well as delivering a more consistent final product.

However, virtual reality is now being replaced or complimented by the use of augmented reality. Whereas virtual reality allows users to “move” through 3D and 4D model environments without moving from their offices, augmented reality (AR) can take the real 3D world and add to it by placing a model of a proposed design onto an existing space. Augmented reality has a wealth of design and construction uses beyond visualization. For example, it can be used for constructability reviews by letting the designer and contractor collaborate on changes that may be required based on the constructability of the design.

The technology for virtual and augmented reality has long being seen as cost prohibitive. However, the drive for improved safety and productivity means we are seeing a renewed drive towards its use in the construction industry.

2. Laser Scanning

One of the most exciting new technologies in construction is laser scanning, which is already helping companies make huge gains in terms of productivity and savings. It has been reported that productivity savings with laser-scanning can be as much as \$0.85 per square foot.

The key lies in the scans themselves. One company has created a hand-held lidar scanner that users can take around their jobsites. They can then take detailed scans of progress that allow for consistent checks of every piece of the project instead of just those that can be checked off on a clipboard. Another has gone one step further, with a robot that can tour sites all on its own. Undeterred by stairs, the tiny machine can trundle around for daily or weekly scans that produce detailed images of progress.

Solutions like these can be used to cut down on costly rework required when errors go unnoticed.

3. New Project Management Tools

Productivity and the difficulties of any large-scale collaboration are another area being targeted by emerging technologies. One of the most important tools that has yet to be fully integrated into the construction industry is contemporary digital planning. Some larger developers have already begun creating and deploying cloud-based workflow solutions to optimize critical functions like scheduling, crew tracking and document managing, so that background tasks

don't have to dominate so many hours of activity. Similarly, cloud-based workflows have great potential to make crews more mobile.

Digital planning and progress tracking, combined with portable access to best practice information, empower mobile teams to access the information they need to be successful. This is becoming even more critical (and rewarding) with the ubiquity of mobile devices and their ability to turn every team leader into a central commander. All of this has the potential to update slow, centralized project management and create more independent, effective teams.

4. Smart Equipment

The IoT is also improving how builders manage large projects. One of the most interesting innovations of recent years is “smart equipment,” or machinery armed with sensors that notify managers of problems well before they turn into costly nightmares.

For example, if temperature changes or unnecessary fuel consumption begin to indicate an issue, IoT-enabled gear can detect it, and you can move in with preventative maintenance before there is any need for repair or replacement. This saves time and money. Fixing something during downtime is much easier than installing an entire project because repairs need to be made.

Some companies have gone even further by deploying full sensor arrays capable of delivering reports on fuel levels and the structural integrity of parts on an individual level. Some even have e-commerce functionality, which allows you to order new parts from within the same interface.

Smart prefab parts are another advance currently being utilized. Radio frequency identification (RFID) sensors can be used to track individual pieces during their whole run through the supply chain. This allows for consistent tracking when things go right and preventative action (reordering, rescheduling) when things go wrong in the supply chain. Once the parts get there, that same RFID tag can be used to implement information about its installation to your Building Information Modelling (BIM), so the work is immediately delivered into your digital workflows.

The IoT is powerful particularly because it allows the digital workflows and cloud-based management to have real impact and significance on the ground as well. Information can be traded back and forth between central systems, workers and their equipment to create a detailed image of all the work being done and the improvements that need to be made hour by hour.

5. New & Redesigned Materials

Developments in materials are happening all the time, and some have the potential to improve a project's efficiency and make it last longer once it's done.

For instance, **researchers just last year** made new discoveries about the recipe for Roman concrete. Unlike modern concrete, which uses Portland cement as a binding agent, Roman concrete uses volcanic limestone, which creates a more solid and long-lasting product.

Composite sheet piles are a material advancement that are already being used today. The use of materials like carbon fiber is already making projects more efficient and long-lasting. The composite is less likely to break down and easier to handle—both of which are important characteristics for any kind of construction project.

More advanced materials, such as “self-healing concrete,” which contains calcite-precipitating bacteria that germinate when water enters the cracks of decaying concrete, to fill the emerging air gaps, or “kinetic paving,” which generates electricity from the footsteps of pedestrians to generate electricity, may not yet make fiscal sense on large scale projects, but show the power of investment into research and development in the construction sector.

6. Exoskeletons

Another technology that would appear to be more at home in a video game, exoskeletons truly have the ability to make construction more efficient and safer. These wearable mechanical suits, worn outside clothing to help with lifting heavy equipment, machinery, etc., are getting closer to becoming a viable option. Designed to “augment with humans,” these suits could aid construction workers with everyday mundane, repetitive tasks, supporting better physical health and helping combat conditions caused by common construction activities.

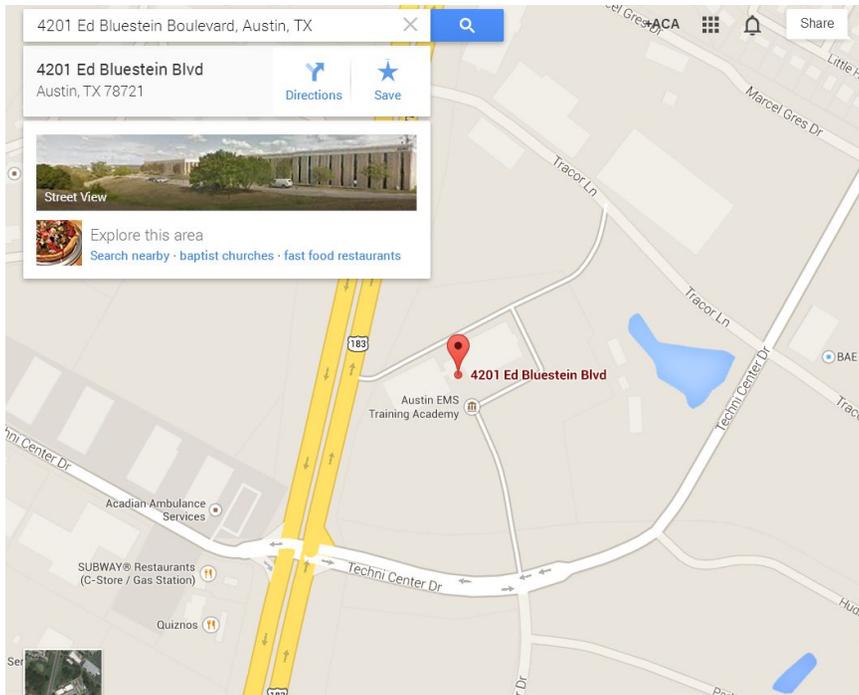
With over **40 companies now manufacturing exoskeletons worldwide**, you may see these exoskeletons start to become more cost effective and their use in the construction industry grow accordingly.

Construction, like every industry, is taking advantage of technological innovations and improvements. The important thing is to find the advancements that drive efficiency, are cost-effective and help improve safety. For complex projects, virtual and augmented reality can provide much greater clarity on design and help manage stakeholder expectations before construction begins. If collaboration and productivity are an issue, there are new tools being created to make communication and project management more efficient and less costly.

If progress updates are presenting difficulties, laser scanning and BIM systems are making clipboard checklists and unassisted walkthroughs increasingly obsolete. If machines are breaking down and parts are becoming lost in the pipeline, advancements in the IoT has the potential to make those problems a thing of the past.

In addition, new advances in construction materials and personal protective equipment are happening all the time to make jobs easier and more innovative. Staying on top of new technologies can be difficult, but failing to do so can have long-term consequences.

*About the Author: Gavin Flynn is an associate director at **Linesight**, a global construction consultancy that provides independent cost management and general consultancy services to the United States construction industry. A native of Dublin, Ireland, but now based in the Bay Area, Flynn is a cost consultant with over 11 years of professional experience in construction cost management.*



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4201 Ed Bluestein Blvd., #2105, Austin, TX 78721

Tel: 512-926-5400

www.acta-austin.com

asiancontractor@gmail.com

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