How BIM 360 Can Help Increase Productivity of Labor Force While Improving Retention, Recruitment and Morale
The challenge of finding employees in the United States continues to grow. The release of the 2019 June jobs report by the Labor Department indicated the gap between available jobs and job seekers is 1.63 million. That's the largest since 2000, when the statistic was first tracked.

Research by Korn Ferry indicates that the gap in the United States could be as high as 12 million by 2030. Shortages are pervasive across the board, from low skilled to high skilled workers, and occur in nearly every industry, including construction.

If the long-discussed national infrastructure bill is ultimately passed, the challenges related to finding employees in the construction industry will grow substantially.

To fill the gap, construction companies are turning to technology, including automated machinery, drones, and robots. In addition, construction companies are utilizing BIM (Building Information Modeling) to help raise the efficiency of their staff both behind the scenes and on the worksite.
Lost Labor's Impact

The labor shortage impacts construction companies when it comes to hiring and conducting business. The time and cost of hiring increases when potential employees are able to be selective and demanding, which lengthens the process. Salaries must be increased to entice potential hires and to match or exceed competition.

Due to the labor shortage, companies are trying to poach competitors' employees with promises of salary increases and extra perks. This happens openly on construction sites.

It’s natural and beneficial for working relationships to develop between construction company personnel and the construction company’s employer during lengthy construction projects. If the employee who was the conduit for the construction company and its employer leaves, the association between the two entities could be damaged, resulting in the construction company losing business.

In addition, some people in the field build up areas of expertise regarding a project and become the glue that holds everything together. While no employee should be irreplaceable, losing key personnel can be costly in time and money. New employees must be brought up to speed, which decreases productivity.

With the loss of key personnel, morale will also likely take a hit. Those left behind are burdened with increased hours and responsibility. Employees who relied on an expert for knowledge will feel frustrated and maybe even uncertain, which could lead to errors on the job.
The situations noted above can combine to create a vicious cycle: An employee leaves a company/project, which causes a hole in the team. The hole in the team causes other employees frustration, and therefore they are more willing to accept an offer from another firm, leaving the original company with an even wider gap to fill.

**Work Smarter, Save Money**

The technology boom has affected every industry, and the pace of technology know-how and growth seems to increase daily. Businesses and industries that do not keep up with technological innovations are suffering, and even dying.

Ever since the creation of hydraulic and pneumatic devices which led to earth-moving equipment in the 19th century, the construction industry has relied on technology. ArchDaily pegs the conceptual underpinning of BIM back to 1962 and Douglas C. Englebart’s paper “Augmenting Human Intellect.”

The term BIM came about in the early 90s, and usage of the technology **continues to grow.** However, some companies are reluctant to engage in work that relies on BIM.

This reluctance can prove costly, as implementing an automated, cloud-based construction management system such as Autodesk® BIM 360TM leads to numerous positive outcomes. The software helps deliver projects on-budget and on-time or even better. It also can assist companies in dealing with labor shortages.
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Just how does BIM 360 save companies money and reduce the cost of a project? It begins with improved communication as it facilitates the establishment of a clear data flow between all parties, which leads to added efficiency. Increased efficiency means fewer change orders, effective scheduling, and streamlined processes. Each of these factors enables companies to boost the productivity of their labor force.

Hensel Phelps, an International General Contractor with over seven billion in revenue in 2018, utilizes BIM 360.

"Using technology and software helps Hensel Phelps to do more with less and has enabled us to increase our productivity in the field."
- Carl Goodiel, Hensel Phelps, VDC Manager Corporate

During construction reviews, models are easily comparable, so conflicts and costly problems are easily identified and eliminated. Should conflicts arise between building systems, BIM identifies the simplest, most cost-effective solution to the problem. The oversight continues during the project as metrics can identify issues and ultimately problem solve. Each deficiency is noted and root causes are identified, which leads to a recognition of trends.

The augmented reality features take the model to the site before construction. This view gives the crew a clear idea of the big picture and a reduction in surprises throughout the construction process. Potential trouble points can be identified and preparations, such as proper scheduling, can ensure the best solution. Ultimately, a smoother process will enable the crew to feel confident, comfortable, and prepared.

With BIM software, people can work smarter. The improvement in efficiency, reduction in errors, and
heightened communication can inspire employees by making the workplace more effective and better run, ultimately leading to greater job satisfaction.

**Recognizing the Benefits**

Many people fear that technology will negatively impact their jobs, or worse, leave them without a job. This common fear prevails whenever new technology is implemented. In fact, technology does disrupt and cause changes to the workforce, including job loss. Yet, it also adds jobs.

Predictions based on studies about how many jobs will be lost and gained due to the impact of technology vary greatly, as noted in MIT Tech Review. Predictions reach as high as one billion jobs lost and 900,000 jobs gained due to technology by 2030. The long and short of it: The future is unclear. What is clear, is that there is currently a worker shortage.

The purpose of technology, including BIM, in the construction field is not to displace workers, however. The goal is to assist workers, help management cover labor shortages, and improve the efficiency and productivity of the workplace. Jobs no one wants, whether due to boredom, potential danger, or gross factor may very well disappear. But would anyone really mind?

When employees are performing jobs they feel good about, their sense of being part of and contributing to the team grows. They experience a sense of camaraderie and bonding that encourages the team to elevate its performance and inspires greater loyalty, leading to less turnover. BIM software also helps to management create a positive atmosphere since it enables work to flow...
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at a practical and sensible rate and limits opportunities for disruptions. Ultimately, workers will appreciate being able to be home in time for dinner.

**Boom to Retention and Recruitment**

A few years back *The Atlantic* reported on a study that found Americans fear certain technology-related occurrences more than death. One co-author of the study said, “People tend to express the highest level of fear for things they’re dependent on but that they don’t have any control over, and that’s almost a perfect definition of technology.”

From people questioning whether the telephone (during its early days) was able to communicate with the dead, to “computerphobia” when the personal computer became widespread, to today when AAA found that 71 percent of people are afraid to ride in fully self-driving vehicles, new technology inspires fear.

While **fears of technology** may be more likely among older people, time and understanding of the benefits can ease those fears.

Professionals who turn to BIM 360 benefit from U.S. CAD’s consultant support system. Consultants advise users on how to implement the system and reviewing best practices while recognizing that one size does not fit all. Each company’s goals and mindset are considered. Hensel Phelps has found the support system to be beneficial. “We rely on U.S. CAD to show us how
Utilizing Construction Technology to Cope With Labor Shortages

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Once in use, BIM 360’s top-notch technology can serve as a draw for employees. To reach millennials, who are projected to be 75 percent of the workforce by 2030, according to the U.S. Bureau of Labor Statistics, companies need to invest in technology. Research by CompTIA found that 71% of millennials say that the degree to which an organization embraces technology/innovation is a factor influencing where they choose to work.

Such is the case at Hensel Phelps which is on the leading edge of most technologies. “It brings the highest quality of employee to Hensel Phelps and keeps them here,” says Goodiel. “We have become very attractive to the new generation of employees who are searching for a company who creates quality work and uses innovative technologies.”

Therefore, having state-of-the-art technology is a boon to both recruitment and retention of employees. The construction industry would benefit from an infusion of technology since it would positively impact the perception of young people. Technologies such as BIM have not only improved the industry in many practical ways but also give those with an appetite for tech a home in construction.

**Improve Communication and Collaboration**

Communication is key in relationships. BIM 360 improves communication as it facilitates smooth information flow through the entire lifecycle of a project.

BIM 360 serves as a single source of truth, which makes collaboration simpler and therefore more
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likely. Since BIM 360 provides access to complete, accurate digital views of a project, teams across disciplines on the project are able to make sounder decisions. Supplying all invested parties accurate information and analysis yields fully informed and empowered decisions and higher quality outcomes throughout the project lifecycle.

When each person/group clearly understands his/her role, greater efficiency ensues. This translates to projects at or under budget, increased profitability for the contractor, and an increase in construction quality.

Because it can be deployed in the cloud, BIM 360 supports anytime, anywhere access to project data. Changes are instantly noted and available to everyone involved, which shortens the distance between the back office/trailer and the work site.

**Without BIM, information can easily be lost during the time-consuming delivery of (not necessarily accurate) data.**

Misinformation leads to an increased risk of mistakes on site, additional time to clear up uncertainties, and frustration for all involved. Ultimately, labor is not used in the most efficient manner. People are needed to create solutions to deal with the changes required and the surprises that pop up. Time is wasted waiting for solutions and approvals from the various parties impacted.

Because BIM 360 acts a single source of truth accessible to all, reliance on one specific individual is minimized. Therefore, disruptions caused by labor force changes, defections, etc., are lessened. It’s quicker to bring new people up to speed when roles are more easily defined.
A single source of truth fosters more frequent and enhanced communication, which leads to a contented and productive work environment. Such improvements will raise employee retention rates because people want to be a part of a work environment that they can be proud of.

**Conclusion**

The construction industry is at an interesting crossroads. On one hand, industry spending is poised to rise and lead to an increase in workload. On the other hand, a worker shortage exists. Vacancies are going unfilled and workers are being poached.

For AEC firms, the opportunities for growth can only be realized with the capacity to complete potential contracts in a reasonable time. An infusion of technology such as BIM 360 enables AEC firms to increase the capacity of their workforce and their bottom line.

Firms adopting BIM 360 and implementing it to its fullest capacity will save time and improve efficiency. With impact felt throughout the entire lifecycle of the project, BIM 360 is more than just another technology: It’s a game changer for AEC firms that can help them overcome labor shortages.