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How Owners Can Help Solve Construction's Workforce Crisis

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The current construction workforce shortage is reaching epidemic levels. Although much concern has been expressed, the problem persists. This inadequate workforce is a barrier to the creation of better infrastructure, adequate housing, upgraded utilities, improved public spaces, and job creation via private industry and public investment. Owners also known as Construction Service Buyers (CSBs) or Construction Users, understand that contractors are a key bottleneck in this country's built asset process. We offer five areas of focus in this white paper to prompt discussion of how CSBs can help to solve the workforce shortage in construction.

The Crisis

According to the U.S. Bureau of Labor Statistics, there were 210,000 construction job openings as of December 1, 2017. This is an increase of 18% from 178,000 in the previous year. From another dataset, the most-recent Commercial Construction Index (CCI), there continue to be challenges in finding skilled workers. Respondents to its survey report that there are critical labor shortages in the Northeast (34% of positions remain unfilled) South (61%), Midwest (53%) or West (65%).

Also from the CCI, construction organizations are increasingly pessimistic about finding qualified candidates. Contractors are more concerned – 60% to 56% - in Quarter 4 of 2017 than three months earlier. Once hired, respondents expressed an increased “high concern” about new employees’ skill level – 58% to 54% - compared with the previous quarter.

From the worker perspective, the construction industry does not offer relatively continual employment. According to the U.S. Bureau of Labor Statistics JOLTS database, from 2007 to 2016, annual separations ranged from 55% to more than 80% of total workers. This is twice the rate of manufacturing. Construction's discontinuous employment dynamic may evidence itself in working-age professionals – 18 to 64 - not choosing construction either as a first career or when switching.

A Collaborative Solution

We ask CSBs to consider reinvesting in the industry in the spirit of enlightened self-interest. All highly respected firms reinvest for future opportunity. Look at the list of top performing companies in any industry – what started out as reinvestment evolved into harvesting of opportunities while continuing reinvesting. If this workforce issue is left untouched, the numbers of quality construction people will continue to fall short of demand even as the industry evolves into a technology-centric one.

There are certain solutions that can be generated from within construction contracting organizations. Many other solutions, however, are problems that would be better solved by many interested parties joining together. There is a natural convergence of needs and wants between contractors and CSBs. Contractors *need* more workers to build an increased amount of work in this current economic boom, while CSBs *want* to have their numerous projects started and completed in time to take advantage of economic opportunity.

We think that CSBs should have an interest in a strong construction industry, and we offer the following suggestions for those organizations looking to be part of the solution.

1. Generative Industry Hiring

We recommend a hiring set-aside for projects. What this means is that a certain percentage of a project budget would be allocated to giving young people and new entrants their first job in the construction industry. Young people could be targeted, but mid-career workers transitioning from the auto industry, farming, armed services, or other careers would also be good candidates. This will have to be part of the procurement process required by CSBs.

What we are suggesting is a generative system of recruiting, hiring and on-boarding. As you may know, a *generative system* is one that builds upon its internal resources. In this case, the funding of educational buildings and infrastructure might be the place to start. If educational contracts require that a certain proportion of workers are matriculating or graduating, for example, then, educational organizations become enablers of a future capability that serves the industry as well as themselves.

We believe generative hiring can begin happening with government projects. The government might build retraining into its tender, with a certain proportion of positions

set aside for young high school graduates or workers from other industries who are looking to retrain.

2. Formal Onboarding

We also recommend that CSBs have requirements about the onboarding of new field employees – including but not limited to those who come through the generative industry hiring processes. It is clear to us that a company once employing this new worker must have an onboarding program planned and ready to execute. Most knowledge in construction is learned on the job, and critical gaps in knowledge can produce significant inefficiencies and bad habits. Good standard operating procedures (SOPs) can smooth the way for new hires and longstanding staff alike. Again, this requirement to hire might start with educational CSBs.

The first 90 days are critical for employees to be exposed to the company culture in which they work. Part of our advising work has been to assist and document 6 month on-boarding processes for craft people and operators. We listen, create and improve specific soft and hard skills training for field workers. It is always a lengthy task, but the consolidation of knowledge between the company, its employees, and us is synergistic. From our observations, few companies have this kind of fundamental knowledge documented that assists greater craft skill and equipment efficacy.

3. Steady Flow of Work

We also recommend that CSBs partner with construction firms rather than establishing the adversarial relationships that are currently common in the industry. To us, the “too hot, too cold” nature of construction leads to two problems: 1) rushed hiring and training (too hot) leading to incomplete learning causing increased safety risk and inefficiency; 2) layoffs (too cold), resulting in lost technical knowledge and enthusiasm for the industry. In our opinion, both are symptoms of an unsteady design and procurement process. This may be an outcome of construction service buyers, funders, and end-users not realizing that a steady design and procurement stream allows contractors to plan and commit resources. Layoffs and chaos drain enthusiasm and discourage self-improvement by the worker. Conversely, a predictable and uninterrupted flow of projects allow workers to build on previous learning and buy-in emotionally to their company and the industry.

Those CSBs and construction firms that have been exposed to Job Order Contracting Procurement know the power of a steady stream approach to construction. This method allows the contractor and the construction service buyer to discuss at some

length the future work required to maintain a building or infrastructure schedule. For instance, the next six month's remodeling and rehabilitation to keep end users satisfied. The execution of that work is a "rolling wave" combination of previous work experience used to improve current construction quality with the incentive of earning future business with this client and others.

Where possible, we suggest that construction service buyers, funders, and end-users become more of a partner with contractors by furnishing a steady flow of construction work. This would mean that long-term planning of shelter and infrastructure needs is critical. For the government, we believe they should focus equally on expansive economic times as well as recessions - when stimulus spending has a needed social and employment effect.

4. Formalized Planning

Standardized project planning would also help existing labor be more productive. A technical and humanistic pre-mobilization process would provide consistent benefits to justify its expense. We know from much research that early planning has a high payoff in adhering to budgets, project timelines and reducing interpersonal conflicts.

As an example, a CSB may set aside 5% of the overall schedule and budget to compel all project stakeholders to produce a plan that includes:

- a technical understanding of the project
- a path of project execution with contingency planning
- a demonstration of team cohesiveness.

Achieving the above could be led by the prime contractor. Since it requires creating deliverables, the cost and time should be spelled out in the contract. Thus, the expense and days needed for this effort which includes all-inclusive stakeholder participation – field people especially are critical attendees – would be appropriately compensated and placed in the normal schedule, providing an incentive to do it very well. The deliverables could be a few or many such as a perfected Virtual Construction Model, project planning document, CPM schedule and project letter of instruction. Done well, each attests to a full review of all possible construction approaches and appointment of the best way for the risk involved. Factors the deliverables would address might be things such as site conditions, plan and specification conflicts, material availability, and staged use requirements.

Team cohesiveness efforts should ramp up before the blur of construction activity starts. Forepersons, superintendents, and project managers, sometimes unknown to each other, could start working together to plan the project at the earliest possible moment. Fewer negative surprises will surely result.

As we stated, CSBs should consider forwarding time and expense to a pre-mobilization time frame from the base contract and schedule. They will still have the insurance represented by retention and bonding to maintain control of project delivery. Specifically, CSBs could forward 5% of the prime contract dollars for the deliverables to the General Contractor to pay for this expense. This would fairly incentivize the hard work of planning and teambuilding without additional cost, except for cash flow. By doing this, they help the productivity of the existing quality craft, operator, and management talent.

5. Facilitate Data Collection

Our long view is that focusing on data will help the construction industry evolve from one that is based on opinion to one based on fact. Workforce practice data could help refine good practices. Also, those that are ineffective could be identified. Between the enhancement and deletion, it would be a nice windfall. This type of information will make the business more manageable and predictable. In our opinion, there is a dearth of data in construction so, the industry is forced to rely on opinion to make crucial decisions. As you may know, some opinions are based on incomplete experience and rarely do the past problems perfectly fit the current situation.

Data can be flawed, but if sourced, collected and analyzed carefully, are highly informative. However, many construction professionals we know have said a variation of the phrase “statistics lie.” We understand this sentiment. However, the answer to a skewed analysis – intentional or not - is to get more data.

What is exciting about focusing on data is that it can prove good practices when practitioners introduce a new process if all other inputs are the same. If improvement occurs then, correlation can be established and causation inferred. Once determined, longitudinal studies seeking more insights can be confidently pursued.

In practical terms, some data is confidential. Therefore, sanitizing may have to occur so practitioners will feel comfortable sharing. Other situations may require that this year’s project information is not made available but, last year’s is.

Many CSBs utilize Project Specific Websites (PSWs). As you may know, these are virtual hubs which are a type of electronic clearinghouse and storage space of project interactions and documents. We know that they possess robust data from our experience.

We believe savvy universities would welcome the chance to participate in quantitative research. They should have no issue in dedicating strong academics nor signing detailed confidentiality agreements to study our industry since it is the largest private employer in the U.S.

Words are inexact translators of meaning while numbers are more precise. We predict that thoughtful data sourcing, capture, and analysis methods will give clarity to workforce problems (and others) making them easier to solve.

Summary and Conclusions

Our industry needs new workers who are well-trained and enthusiastic. The current adversarial relationship between CSBs and contractors prevents us from using collaborative strategies. A change in approach will encourage focus between contractors and construction service buyers to increase new, and potentially career minded entrants. Importantly, it is not enough to bring people into the industry. Once they are employed, significant onboarding must be planned and executed to keep this targeted group engaged and improving.

Reframing of the worker shortage problem as one including CSBs and contractors as collaborators should help. Both parties will win long-term with a well-developed and larger workforce



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