

# Site Safety in San Luis Obispo County

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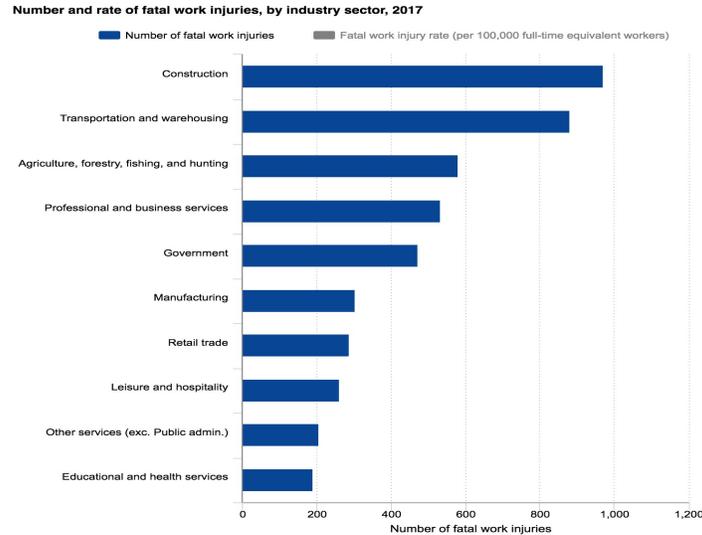
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Site safety is a key determinant in a project's success. In order for a site safety plan to be effective it needs to be implemented and enforced from management all the way down to the laborers on site and it must be site specific. The goal of every safety plan is to identify potential hazards and to have zero accidents throughout the project's construction. An accident on the jobsite can cause a project to be delayed, increase overall cost, and can even cause a fatal accident (Randle, 2018). This paper will investigate the factors affecting the lack of safety compliance among San Luis Obispo's general contractors. Qualitative data was obtained through site visits and interviews with three site superintendents. The job walks served as an opportunity to inspect the job site and identify inadequate measures and safety plans in place. The data obtained indicates San Luis Obispo County job sites lack proper safety planning and enforcement.

**Keywords:** site safety, safety plan, construction risks, safety procedures, construction sites

## Introduction

According to the U.S. Bureau of Labor Statistics, construction is one of the most accident-prone industries overall. Illnesses and injuries occur at higher frequencies in the construction industry than in any other industry in the United States (see figure 1)(Jin, 2019). Even though safety standards for the construction industry are improving continuously, annual accident statistics are not significantly decreasing. More than 100 workers die and 400,000 others become injured annually (Grainger, 2017). A study concluded that the top factors affecting the safety of the construction industry are the regulation of safe work conditions, conducting safety training, worker and supervision education, the control of contractors over subcontractors, maintaining close supervision of workers, and assigning responsibilities to all employees (Jannadi, 1996). In order to decrease the amount of jobsite related injuries, construction companies should enforce proper procedures and regulations frequently. Workers are more likely to comply with safety standards if there is constant communication and if expectations are clear and shared with everyone. Accountability should be expected at all levels, and upper management, such as site superintendents and project managers, need to lead by example. Contractors need to put an emphasis on safety values, integrate safety into planning, and not bid work at a lower price by compromising safety (Goldenhar, 2014). Toolbox talks, company safety booklets, providing a safe working environment and having a designated safety representative should be part of every contractor's safety program (Sawacha, 1999). The absence of any of these safety plan components can increase the likelihood of a potential hazard to go unidentified, therefore posing a threat to workers' health and safety.



*Figure 1: OSHA's stats on fatal work injuries, by industry*

### *Construction Industry Trends*

The average age of the current construction labor force is increasing which impacts workers' performance and productivity, and therefore makes job site accidents more probable (Wong, 2019). Construction is a labor-intensive industry that may require having to work long hours in intense weather conditions. Elderly workers have less endurance than younger workers and may become fatigued more rapidly. Fatigue can lead to accidents because workers may skip precautionary steps in order to get the job done quicker. Individuals that have been working in the construction industry for various years also tend to become complacent with following safety protocol. Since they have the experience and have been performing the same task without getting injured they continue to hold on to that false sense of security (Simplified Safety). Site conditions are constantly changing, and keeping track of all work going on can be difficult. Safety hazards are not always obvious and can go unnoticed. In the past few years the construction industry has been faced with a shortage of skilled laborers. This leads to lower productivity levels because it takes time to train and educate unskilled laborers. Inexperienced laborers are also more likely to be involved in accidents because of their inability to identify and assess hazards.

### **Methodology**

The objectives of this qualitative research are as follows:

- Identify factors that contribute to San Luis Obispo contractor's noncompliance with safety regulations.
- Highlight the challenges with having laborers follow safety protocol
- Highlight the challenges with the San Luis Obispo construction market
- Highlight the problems with the safety planning on San Luis Obispo job sites

The qualitative study was done through interviews with site superintendents of three different San Luis Obispo general contractors. A list of questions was developed when doing preliminary

research. These questions helped guide the interviews with the superintendents. Job site walks of the three different job sites were also conducted. The job site walks served as an opportunity to inspect the conditions of the site and the contractor's compliance with safety standards. An inspections checklist was created prior to the job site walks. The responses provided from the interviews and the results of the inspections were then evaluated in order to understand the challenges with the implementation and execution of site safety plans on San Luis Obispo job sites. The results of this analysis proved that general contractors in San Luis Obispo did not prioritize safety. The lack of enforcement and safety management was proven through the interviews and job site walks.

### **Project Information**

For confidentiality reasons contractor names will not be used throughout this research and analysis. The following are key details on the three different San Luis Obispo construction projects that relate to this research.

#### **Site #1**

- General Contractor size: Mid-size
- Type of Project: Private, luxury hotel
- Initial Expected Finish Date: April 2019
- Current Expected Finish Date: August 2019

#### **Site #2**

- General Contractor size: Mid-size
- Type of Project: Private, residential condominiums
- Initial Expected Finish Date: December 2018
- Current Expected Finish Date: September 2019

#### **Site #3**

- General Contractor size: Mid-size
- Type of Project: Private, commercial building
- Initial Expected Finish Date: August 2019
- Current Expected Finish Date: November 2019

### **Interviews**

All three general contractors admitted that there are no daily toolbox talks prior to each work day. The biggest temporary structure system that was on all three sites was scaffolding. The superintendents claimed that the inspection of the scaffolding structures were the responsibility of the scaffolding subcontractor. The superintendents also all agreed that it was their own responsibility to inspect and walk the job site prior to each work day. There had not been any accidents reported on all job sites prior to each site visit. All three job sites required the same personal protective equipment (PPE), such as hard hats and reflective safety vests. The first general contractor interviewed did not have a designated safety director on their project. The second contractor that was building high-end condominiums stated that the company did not have a safety director and that the role was shared by the superintendent and project manager on site. The second contractor also stated that they had a third-party inspector that visited the site periodically to document site safety inspections and provide recommendations on what needed to

be improved or fixed. The third contractor did have a safety director, but they only visited the site every two to three weeks.

When asked about their opinions on whether or not they agreed that there was a shortage of skilled labor in San Luis Obispo, contractors responded in similar ways. All superintendents said that the entire construction industry was facing a shortage of skilled labor and that it was a prevalent issue in the San Luis Obispo workforce. One superintendent was able to elaborate on this specific issue, stating that part of the problem are the labor's wages in San Luis Obispo. He stated that the wages are not competitive enough in San Luis Obispo compared to the Los Angeles and Bay area. He also stated that cost of living in San Luis Obispo does not attract skilled laborers to move and work in the area. Another superintendent said that the only skilled laborers needed were the crew leads and that they were in high demand.

All three superintendents had similar opinions regarding safety regulation in San Luis Obispo. According to the interviewed superintendents, San Luis Obispo has enough safety regulation. Two superintendents mentioned that they had previous visits by the Occupational Safety and Health Administration (OSHA). When asked the question "is there enough safety regulation and enforcement in San Luis Obispo?" one superintendent was convinced there was. Two superintendents discussed the fact that the size of the general contractors (GC's) had to do with the ability to enforce safety standards and follow safety codes. According to them, the bigger General Contractors were able to provide more oversight and had the the ability to enforce their safety plans and have their workers comply.

### **Site Walks**

After each interview a job site guided by an inspection checklist was conducted. The first job site was very unorganized and disorderly. Material was scattered throughout the interior of the building and also throughout the exterior including walking areas. There was an onsite dumpster near the entrance of the site but there was still trash laying around creating a potential tripping hazard. The personal protective equipment (PPE) required on the site was hard hats and safety vests, yet very few workers had both on. A subcontractor laborer was even seen wearing shorts and no form of safety vest or hard hat. Some laborers were wearing headphones or listening to music on speakers. Scaffolding was required for the work being performed on the exterior walls, and they were missing toe boards. For rooms with unfinished balconies, no proper warning for the fall hazard was implemented.

The second construction job site had an organized layout of materials but had piles of dirt obstructing the vehicle and delivery routes. Similarly to the first site, PPE was not worn by all laborers, including those working on scaffolds. The scaffolding was also missing toe boards and guardrails. Laborers performing exterior concrete work were using saws without safety guards and were not wearing any eye protection. Additionally, not all power tools were grounded and some cords were missing the ground prong.

The third construction job site had minimal trash laying around the site and material was properly stacked and stored. Only a handful of the subcontractor crew members were wearing either a hard hat or safety vest, but neither had both on. When the site visit took place, the

enclosure of the building had been completed and most of the work being done was on the exterior walls. The scaffolding was missing planks and toe boards. The site had no signage indicating access routes.

## **Results and Discussion**

From the data collected through the interviews and site walks, it is evident that there is a lack of safety enforcement and implementation by some general contractors working in San Luis Obispo county. The current state of the construction market in the area plays a key role in the safety climate of San Luis Obispo. As of March 2018, there were more than 65 projects under review or construction in the city of San Luis Obispo alone (Burgess, 2018). This has been the biggest boom in construction the county has seen (Burgess, 2018). There is an obvious shortage of skilled laborers in the area making the general contractors in the county unable to remain competent in this time of fast growth. The amount of change orders and project delays prove that the local GC's are taking on projects that they are not completely prepared to build. The rapid construction growth in the county increases the pressure to complete projects quicker. The GC's create ambitious initial schedules and budgets but are unable to meet their expectations. The size of the construction companies also create a limitation on their ability to implement better safety programs. It is easier for bigger companies to allocate and invest money on their safety programs because the cost of safety implementation is shared through various projects. Large companies tend to invest more resources in safety and have a greater commitment to safety programs than smaller companies (Guo, 2018). The general contractors in San Luis Obispo that were part of this research were all mid-sized companies with very few projects going on simultaneously.

Since there is little commitment to safety by part of the smaller sized GC's in the area, workers also have less motivation to follow safety protocol. Management must lead the way in prioritizing safety in order for laborers to comply with site safety plans. Workers are more likely to be part of safety management when there is supervision, coworker support, and enforceability (Guo, 2018). When visiting the sites there was an obvious indifference towards safety by the superintendents. All three of the superintendents were not wearing the required PPE, superintendents were aware of the subcontractors unsafe habits, and they did not reprimand them. Workers on the scaffolding were not wearing a hard hat even though they ran the risk of being struck by overhead material. All superintendents stated that they were responsible for walking the jobsite prior to each work day, but the scaffolding on each site was not completely safe (missing toe boards and guardrails).

By the appearance of the sites, it was evident that management did not set clear expectations prior to the start of each project. A clean and orderly site can help decrease the chances of tripping or falling hazards. The conditions of a construction site are constantly changing, and it is difficult to track the progress and changes to the site when there are multiple subcontractors working simultaneously.

The lack of trainings and toolbox talks also contributed to the unsafe practices on each site. Toolbox talks and trainings would help combat complacency. An observation made during each site visit was that the majority of the laborers were middle-aged, most of which probably had been performing the same task for a couple of years. This would explain their unwillingness to

follow safety rules and follow proper procedures. If they have not been in a prior accident they continue to hold on to the idea that they will not get injured because it has not yet happened. In some cases, avoiding to take precautionary steps allows them to get the job done quicker.

### **Conclusion**

The construction market conditions in San Luis Obispo make it difficult for general contractors to focus on improving their safety programs. The current boom in construction adds pressure for contractors to work faster in order to get more projects done and safety becomes less of a priority. Management's failure to enforce safety plans does not encourage safe practices by their laborers. Company size also affects the amount of resources, time, and monetary investment a company is willing to spend on safety. In order for the safety culture in San Luis Obispo to change there must be a focus on internal training and creating programs that educate management on how to implement and enforce safety regulations. Management will then be able to educate and set clear expectations for all team members including subcontractors. Superintendents and project managers need to set an example in order for the safety climate in San Luis Obispo county job sites to improve.

## References

- Burgess, M. (2018). *Boom town: San Luis Obispo's 65+ development projects* [WWW document]. URL <https://mustangnews.net/boom-town-san-luis-obispos-65-development-projects/>
- Goldenhar, L.M. (2014). *Safety Culture and Climate in Construction: Bridging the Gap Between Research and Practice* [WWW document]. URL [https://www.cpwr.com/sites/default/files/CPWR\\_Safety\\_Culture\\_Final\\_Report.pdf](https://www.cpwr.com/sites/default/files/CPWR_Safety_Culture_Final_Report.pdf)
- Grainger Industrial Supply. (2017). *OSHA General Industry vs. Construction Industry Standards* [WWW document]. URL <http://www.grainger.com/content/qt-industry-vs-construction.html>
- Guo, B.H.W. (2018). Does Company Size Matter? Validation of an Integrative Model of Safety Behavior across Small and Large Construction Companies. *Journal of Safety Research*. 64 (73), 73-81.
- Jannadi, M.O. (1996). Factors affecting the safety of the construction industry, Building Research & Information. *Taylor & Francis Online*, 24 (2), 108-112.
- Jin, R. (2019). A science mapping approach based review of construction safety research. *Safety Science* , 113, 285-297.
- Randle, Jason. *Construction Project Site Specific Safety Plans – Expert Article*. *Robson Forensic*[WWW document]. URL <http://www.robsonforensic.com/articles/construction-site-specific-safety-plan-expert-witness/.html>
- Sawacha, E. (1999). Factors affecting safety performance on construction sites. *International Journal of Project Management*, 17 (5), 309-315.
- Simplified Safety. *Complacency: Safety's Worst Enemy*. [WWW document]. URL <https://simplifiedsafety.com/blog/complacency-safetys-worst-enemy/>
- Wong, F.K. (2019). Interrelation between Human Factor–Related Accidents and Work Patterns in Construction Industry. *Journal of Construction Engineering and Management*, 145 (5).

## **Appendix**

### *Interview Questions*

1. Are there toolbox talks before each work day? Who is responsible for doing them?
2. If temporary structures are in place, who is responsible for inspecting them?
3. Who is responsible for providing safety trainings?
4. Who is responsible for walking the jobsite every morning before each work day?
5. Are the subcontractors responsible for their own safety walks?
6. Have there been any accidents on this specific project?
7. What type of PPE required on this Jobsite?
8. Do you agree that there is a lack of skilled laborers in SLO?
  - a. - To what degree?
9. Is there a safety director/coordinator position in your company?
  - a. -Are their dedicated or designated safety coordinators on your job sites?
10. Are there documented weekly site safety inspections?
11. How many days was this project scheduled for? Is it on track to finish on time?
12. In your opinion, is there enough safety regulation in SLO?
13. Is there enough safety oversight and enforcement in SLO?