

Case Study: Effects of COVID-19 on a Mid-Size San Francisco Commercial General Construction Company

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The Covid-19 pandemic has had an adverse effect on the commercial construction industry. New safety procedures and regulations set by local government and health officials have made it difficult for construction to proceed at the efficiency level it had prior to the pandemic. The San Francisco Bay Area was subject to strict protocols starting in March of 2020 that vastly limited the capability of construction companies to perform work. This case study looks into the ways in which a mid sized commercial general construction contractor from the San Francisco Bay Area was impacted by Covid-19 and the methods they used to handle the associated challenges. While initially being closed completely from a statewide shelter in place order, the company eventually was permitted to return to work, and was tasked with developing ways to mitigate the transmission of the virus on their job sites to keep employees safe and projects open. Additionally, the company had to make adjustments from a business standpoint to keep itself profitable in the present and the future. The company's position in a region heavily impacted by the Covid-19 Pandemic makes them a good candidate for conducting a study in this area.

Keywords: Covid-19, Pandemic, Construction, Bay Area, Safety

Introduction

It is estimated that on January 31, 2020, the Covid-19 pandemic arrived in the San Francisco Bay Area. A widely unprecedented event, its presence affected the functionality of the region's construction industry. As cases began to emerge, public officials had a cause for concern. To address this dilemma, the counties of San Francisco, San Mateo, Sant Clara, Contra Costa, Alameda, and Marin issued a joint press release that prohibited the continuation of construction on commercial and residential projects in the area starting on March 31st of 2020 (San Francisco Department of Public Health, 2020). This prompted the physical shutdown of many job sites putting the industry out of work for the duration of the mandatory shelter in place period, which lasted through May 3rd.

Construction sites were affected by new safety requirements issued by the CDC and OSHA. Additional PPE such as face masks became required along with social distancing whenever possible. Other workplace recommendations from state and city government officials included 14 day worker quarantine if someone had a temperature above 100.4 degrees fahrenheit, extra site sanitization

protocol and limits to working hours and manpower. (Center for Disease Control, 2020)
(Hollingsworth, 2020)

The effect of the pandemic on commercial construction created challenges in business proceedings. Most construction contracts are devised with an agreed price and schedule. Since projects were halted for over a month, meeting such agreements became difficult. The circumstances of the pandemic were unforeseen, meaning that construction contractors would not be solely liable due to Covid-19 being considered a force majeure event. A force majeure clause is a common part of a construction contract that frees all parties from their obligation to perform, if at least one of the parties involved was unable to complete their work due to unforeseen circumstances (Hansen, 2020). Alternatively, some believe the event wasn't completely random, and that given precursor events such as previous outbreaks of SARS and MERS, other respiratory diseases that caused setbacks on construction. However, similar to earthquakes or threatening weather events, the likelihood of being affected by a pandemic of this magnitude is still unprecedented (Duggan, 2020).

Methodology

The project was completed through an analysis of collecting qualitative data of a construction General Contractor. The company of interest is based in San Francisco, California. The Company has a prominent role in construction in the region with multiple job sites affected by the 2020 Covid-19 Pandemic, making them a good candidate for the study of how the construction industry was impacted by the unprecedented event. The development of project data was compiled through surveys of company employees which were asked questions on how the company approached the scenario presented by the pandemic, covering Covid-19 related problems, innovative hazard mitigation strategies, and methods to keep the company successful from a business perspective.

Preliminary Questions:

1. What type of contractor is the company and where do they perform their work operations?
2. What type of personnel does the company employ?
3. How large is the company regarding total revenue of work completed annually?
4. Were company work operations affected by the Covid-19 Pandemic during 2020?

Focus Questions:

1. What preparations for a mass pandemic did the company have in place prior to becoming alerted about Covid-19?
 - a. What was the level of preparedness of the company safety department for such an event?
2. How was the company affected by the Government's initial pandemic response?
 - a. What were the mandates and restrictions imposed?
 - b. What percentage of company operations were ceased?

- i. To what degree was work limited?
 - ii. How long did said operations cease for?
3. What immediate actions were taken by the company to ensure employee safety?
 - a. What role did the company's safety department play?
 - b. Were company wide outbreaks prevented?
4. What steps were implemented to ensure worker safety upon their return and how was the work atmosphere impacted?
 - a. How were day to day job site operations changed?
 - b. What measures were taken to provide safety at the office?
 - i. What problems arose in implementing these strategies?
 - c. What measures were taken to provide safety at job sites?
 - i. What problems arose in implementing these strategies?
 - ii. How effective was the company in its compliance with government mandates for job sites?
 - iii. Were any job sites shut down after returning to work for failure to maintain safety regulations or a Covid outbreak?
 - d. How were day to day job site operations changed short and long term?
5. How were project schedules impacted long term?
 - a. How significant were project delays caused by subcontractors or manufacturers?
6. How were the project costs impacted?
 - a. Did Covid-19 protocols alter cost projections from before the Pandemic?
 - i. How did the company address project financing and standing contracts that required alterations due to Covid 19 with developers, subcontractors and manufacturers?
7. What steps did the company take to ensure their financial stability during the pandemic?
 - a. Did the company retain its employees?
 - b. How was hiring impacted?
 - c. Were pay and benefits impacted?
8. Were certain construction sectors more viable during the pandemic?
 - a. Were certain projects deemed more essential than others?
 - b. Did the company alter its interest in project types they would pursue in the future?
9. How did the company's estimating department approach bidding work with the potential for a drastically changed industry economy in the near future?

Results

Preliminary Questions

The company of interest is considered a mid-size general construction company. The majority of the company's work is completed within the city of San Francisco with nearly all work being completed exclusively in the San Francisco Bay Metropolitan Area. The Company has over 400 hundred employees, including field labor, project management teams, and office staff. Last year the company

completed just under \$500,000,000 dollars in work through mostly commercial and some horizontal civil projects. In March of 2020, the company's work operations were shut down along with most of the industry as a result of government mandates to combat the pandemic, closing all job sites, and office workspaces.

Focus Questions

Prior to March of 2020, protocols for dealing with a widespread pandemic of large magnitude were not common or at least used in recent memory. All construction sites present a wide array of hazards to those who are working. Due to the concern for mitigating more prevalent accidents, a pandemic entering and ravaging job site was an afterthought. With information about the potency of Covid-19 being relayed from health officials to the public, construction companies had no choice but to comply with government lockdowns to prevent further transmission of the virus. This proved to be vital from a safety standpoint as it was not clear initially what precautions would be necessary to keep employees safe from harm.

Starting on March 16th of 2020, all counties in the San Francisco Bay Area issued a mandatory stay at home order until May 1st. This prompted the shut down of job sites in progress and put a halt on all other company operations. On April 16th, San Francisco issued exemptions to the mandatory shelter in place order allowing for businesses that commenced outdoors to resume if deemed essential. This enabled the company to slowly resume job site operations with limited function due to the fact that many office and project management staff members were still sheltering in place and working from home. Starting in early May, project management staff deemed essential to their construction projects were permitted to return to the sites under new required safety protocols issued by local and state governments. Meanwhile, office staff whose on-site presence was not deemed essential continued to work at home throughout this duration of the company's initial Covid response period from mid-March to early May.

The company's safety department played a prominent role in mitigating the effects of the pandemic early on. While not being well versed in dealing with a mass pandemic, the safety department was able to distribute vital information company-wide to ensure that government-mandated health procedures would be followed. Ensuring that all projects were completely vacated and requiring employees to shelter in place and monitor their health was a crucial mitigation strategy that was implemented to keep at-risk targets from contracting the virus. Due in part to this process, the company was able to avoid Covid-19 exposure early on and thus keep the company healthy and intact, ready to adjust as necessary for the upcoming phases of reopening. No Covid-19 cases were reported from within the company from the time they evacuated the job sites to the time essential workers were allowed to return.

Starting in May, the company was able to restore work operations on a limited basis. Project teams were permitted to return to work because it was decided that working from home would be an ineffective method for sustaining work progress. As job sites began to open up, safety measures were implemented to minimize contact amongst those present to avoid widespread transmission of the

virus. The time of work shifts remained the same, as the company's projects commenced daily during standard day time working hours. Local governments, along with OSHA issued guidelines for social distancing. A protocol that had been used to curb the spread of the virus amongst the public was being brought to all job sites. Under this provision, all personnel on site were required to wear a mask or respirator at all times in addition to traditional PPE. All persons on site were required to maintain a spacing distance of 6 feet from one another. The exception to this were personnel who wore a protective face shield and when building tasks were deemed impossible without close contact.. The company distributed full face shield protection to all of their on site employees which included laborers, members of the safety department, and the project management teams.

While efforts to minimize contact to transmit the virus were implemented within project sites, the company instituted preventative systems in an attempt to keep covid out all together. The company limited entry points at the site so that each person who entered went through a covid check in procedure. Posted at the gate was a designated Safety Compliance Officer, a laborer trained by the safety department, who would verify that all who entered were not a risk to spread the virus to others. All who entered had their temperature taken with a reading under 100.4 degrees Farenheight required to be granted access. Once this was completed the entrant was asked a series of questions verbally to communicate as to whether they had come down with any symptoms of Covid-19 such as a runny nose, a headache, a shortness of breath, or a loss in taste or smell within the past 14 days. If all these were passed, entry was granted and the person was permitted to enter and exit the site gate freely throughout the day. To improve work flow efficiency at the gate, each entrant who passed the screening was given a wristband at the beginning of each day to denote they had completed the process. Additionally, the employees who administered gate check in wrote the names and contact info of everyone who was granted access to the site. With several sites having over 100 entrants per day including subcontractors, this was necessary as to have a contact tracing system in place in the event a Covid-19 outbreak occurred on a job site. The system created by the company was then improved to make contact tracing and symptom monitoring more effective. Starting in June of 2020, all persons who entered a company job site were issued a sticker with a number exclusive to each individual. Upon a person's first entry to a company site during this process, they gave their contact info to the company gate guard, had their temperature taken, and were then issued a sticker. This cut down wait times to enter the site as the number could be traced to each person every time they entered a company job site, rather than having to write down the individual's contact info each time. The process was finalized by the company's safety department when they introduced QR code entry systems to each site and the company office. With the use of a smartphone, one could hold their camera up to the code on a fence adjacent to the entry gate. The QR code would then prompt them to fill out a form using their phone. The form would then request the number on the previously issued sticker of the participant before asking them whether or not they had any symptoms that may be associated with Covid-19. All the responses were then compiled into a daily log in Smartsheets online which enabled the gate guard and the company safety department to have real time access to Covid-19 tracking on job sites and make it easier to identify those who may have been a risk in spreading or contracting the virus. Through this strategy, the company was relatively successful in keeping their job sites Covid-19 free. The only exception was however one major 3-week job site shut down for a

project that had been associated with a subcontractor which had a virus outbreak amongst their own employees.

On job sites, the company implemented recommendations from the CDC to eliminate the potential for virus spreading. Stationed at every gate and doorway on-site and at job trailers were bottles of alcohol-based sanitizer. Readily available for all to use, it was required for all site employees to apply prior to entering and exiting. The company also had a supply of disposable masks available to anyone on site including subcontractors. The objective was to remain overly prepared to ensure that essential prevention equipment was never unavailable to those who needed it.

Project management teams were limited in their ability to perform at their efficiency levels prior to Covid-19. Social distancing in offices and job trailers meant that space was limited for company employees. This led to the rearranging of the workspace and in some cases layoffs of non-essential employees. Owner, Architect, Contractor meetings that were previously held weekly in-person were now held virtually with only the company project team remaining on site. City building inspections were completed virtually with the use of ipads starting in May of 2020 when projects began to open back up. During July, inspections began to be held in person once again, which enabled the company to be more efficient in completing such tasks as an in-person inspection was quicker for identifying and solving issues.

The company faced challenges with remedying the lost time on their project schedules due to San Francisco's shelter in place order in the Spring. On average, project teams lost around 2 months of progress. However, due to the unforeseen circumstances of the pandemic, project teams were able for the most part avoid financial losses that are associated with delays in project completion. Under the claim that the pandemic resulted in the delays through unforeseen circumstances, the project teams were able to avoid any major liabilities such as liquidated damages through compiling evidence to show they were not at fault. Each project team devised a list of items that were affected by the pandemic such as subcontractor labor shortages, supplier and manufacturing delays, and the outright inability to commence work during March, April, and May. These actions were taken on the basis of force majeure.

Subcontractors who had standing contracts with the company made their own claims under force majeure. This led to project prices increasing as subcontractors needed change orders to cover the cost of extra covid-19 safety protocols. Manufacturers in dealings with the company were stretched thin in terms of manpower due to some having covid outbreaks at their facilities across the country. In an attempt to meet their schedules to the best of their ability, some company project teams sourced elsewhere for their manufactured goods, which often led to higher premiums but managed to save time in the project schedules.

While Covid-19 related project shut downs made it difficult for the company to continue producing a profit, they managed to retain all their employees with the exception of a few project administrators. A total of 5 outside hires were made during Summer of 2020. These hires were for the safety department and on site project teams. The company hired several safety officers, superintendents, and

project engineers while no office positions such as accountants and administrative assistants were added.

While the company managed to refrain from layoffs, executive members of the company decided it best to make adjustments in payroll. While no reductions to employee salaries were made, from June of 2020 to the end of the calendar year, salaries were capped with no increases across the company. Additionally the company put their 401k contribution plan on hold. Traditionally employees would receive a share of the profit the company made at years end, but due to the instability of the commercial construction market, and uncertainty for the future, a conservative financial approach was made to avoid additional overhead costs.

The company's portfolio of current projects is composed primarily of ground up commercial buildings and tenant improvement projects. The company also contracted several small horizontal projects. When the pandemic first started causing shutdowns within the industry, all the company's projects were affected. None of the projects ran through the shelter in place order that lasted until early May. The company was able to open all of their projects back up during May as their work was deemed essential construction.

Tenant improvement projects have typically been the company's strong suit. Even with the effects of the pandemic on construction, this continued to be the project type the company pursued most. Commercial office type buildings were not bid as frequently as prior to the pandemic. This was a side effect of developers not wanting to put money into office buildings that would not be leased out because of companies having their employees work from home.

During the pandemic, the company's estimating department bid aggressively on as many projects as they could. The thought process behind this strategy was that there was potential for a market decline in construction in the near future. The company tried to target projects that would have a stable distribution of project funds, so they pursued public works projects which were the most likely to continue in the event of an economic downturn. The company found that they were successful in winning work during the pandemic. The big cause for concern however, was that project owners were not releasing funds to start the project after the bid had been won. The hesitation of owners and developers to start projects indicates that they are not confident their investment in the project will pay off because of the pandemic. This trend has made the company heavily reliant on their work that was already in progress pre Covid-19 in order to turn a profit.

Analysis of Results

Company Overview

As a mid size commercial contractor, the company had a multitude of projects running across the San Francisco Bay Area Region during the start of the Covid-19 crisis. The company faced an unforeseen condition that nearly crippled their ability to function from March to May of 2020. Their work in the

commercial construction industry was deemed essential by the local governments of the Bay Area allowing them to continue their projects on a limited basis. A considerable effort was made by upper management to retain all employees, and win more work to be completed in the future.

Identifiable Issues

While the company was able to address the unforeseen circumstances with relative success, there were many problems in working out the methods for doing such. Due to the capacity limits of the company headquarters, almost 95 percent of office employees were asked to work from home during the entire post shelter in place period. Communication between employees is not as efficient when they are not able to convene in the same place. With office staff being limited to video conferences, they are not always able to grasp the full sense of what is happening in the field. Key players on projects such as architects are not able to do site walks in the event that confusion arises in the plans.

Keeping job sites running is a constant issue because of the potential for a Covid outbreak. While the company trains their own Safety Compliance Officers (SCO) to run the contract tracing system, performing such with accuracy is not always straightforward. Some workers who enter the site don't have a smartphone and are therefore unable to participate in the daily tracking form accessed via a QR code. Additionally, some workers fail to enter their information correctly or completely try and bypass the tracking system by using an unguarded entrance. If their contact information is not registered each day by the SCO, they are a risk to spread the virus on site as it is impossible to know if they had any symptoms or who they were in contact with throughout the day.

Compliance with government issued safety regulations was a lingering battle as it is almost impossible to visually monitor all the workers that enter each site daily with some having manpower of over 100. Health inspectors have the ability to shut down a job site for 21 days if they see that workers are violating Covid-19 safety protocols. Those on site need to be vigilant for the potential of a random visit from this inspector. Wearing a mask all day and staying 6 feet apart from one's co workers is very difficult to maintain. Worker negligence is the primary factor for this not being accomplished. However, high temperatures during Summer months can make wearing a mask for long periods of time uncomfortable and potentially dangerous because of restricted breathing. The only times mask usage was not deemed mandatory by safety regulations was when air temperatures exceeded 90 degrees fahrenheit, categorized as extreme heat

Some subcontractors on company projects try to take advantage of the contract changes due to Covid-19. While there is legitimate reason to request additional funds from the company for daily personal sanitation of work areas, some subcontractors were keen to build their profit margin as much as possible rather than actually making efforts to keep their work stations and employees safe. Subcontractors would fail to follow through on the claims they made to receive additional funding to their contract, and it was up to the company to monitor whether or not they were doing so. Additionally, subcontractors who didn't comply with sanitation procedures put the company at risk because of the potential for a job site shut down due to health safety violations.

The success of the company's future is reliant on their ability to receive more work. The company is almost exclusively involved in commercial projects. Due to the uncertainty of the economy from the pandemic, developers have refrained from distributing funds to start projects that the company has won bids for. If developers don't begin releasing funds, the company will face difficulty in staying afloat financially, and could require more decisions from upper management to make cuts in the company where necessary.

Conclusion

The construction industry is facing an unprecedented crisis that has threatened the safety of all employees both in the office and in the field settings. The company analyzed in this study has made considerable efforts to remain efficient in their work during the Covid-19 Pandemic. The company safety department is coping with an unknown event that threatens employee health daily. As this is the first pandemic to affect the industry on this scale, the company is making innovative efforts to keep employees safe and jobsites from being shut down. Little information on how to deal with such an event exists, so the company is having to develop their own strategies to comply with mandated protocols from health officials and local authorities. Even with all these measures being taken, there is still great uncertainty in the future success of the company due to the risk of employee health, current project shut downs as a result of non compliance, and new projects not being started by developers.

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