

The Effects of COVID-19 On a Commercial Construction Company: A Case Study

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The COVID-19 pandemic of 2020 and 2021 resulted in many states issuing stay-at-home orders and closing businesses. In some states, construction was deemed essential and allowed to remain open. Dempsey Construction, Inc. is a Southern California commercial construction company that was permitted to continue operation with the exception of a brief lockdown in March and April of 2020. Despite being permitted to remain open, the company had to face many direct and indirect challenges resulting from the worldwide pandemic. In addition to schedule adjustments, daily cleaning on jobsites and in the office, and increased material prices and lead times, Dempsey also had to contend with the unknowns of the future. Projected job loss, subcontractor and developer relationship changes, and the crash of specific construction sectors were all indirect impacts that Dempsey had to contend with amidst the pandemic. Despite the negative impacts of the pandemic, many employees were able to find positive changes due to COVID-19. The worker relationship onsite became more caring, time spent traveling to meetings was significantly reduced, and on a more personal level, many employees were able to spend more time with their families. The pandemic highlighted Dempsey's ability to survive a recession through conservative practices and proper planning.

Key Words: COVID-19, pandemic, construction, stay-at-home orders, solutions

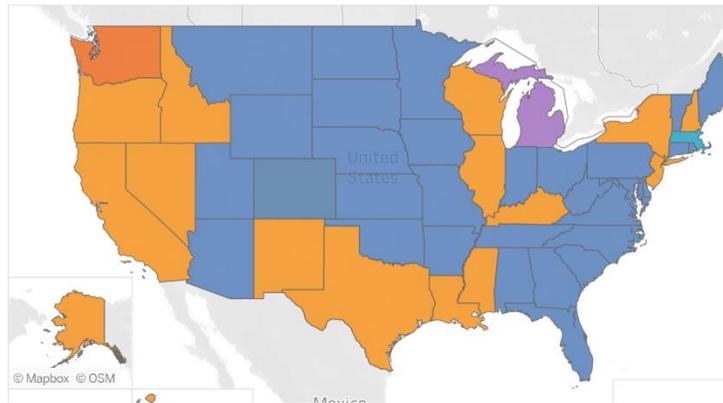
Introduction

In March 2020, the world was hit with a global pandemic the likes of which it had not seen since the Spanish Flu of 1918. The COVID-19 pandemic has had mixed results in the business sector of the United States, with some businesses being devastated while others have been virtually unaffected. Some effects of the pandemic have been gradual and slowly developed while others have happened overnight. While OSHA has been placed in charge of ensuring the safety of workers amidst the spread of COVID-19, there were no previous OSHA regulations, safety measures, and guidelines for a pandemic, especially of this scale. Throughout March 2020, the domino effect of states issuing stay-at-home orders caused panic in workers and business owners that could not easily transfer their work to a virtual platform. Conversely, companies' profits in the e-commerce, industrialization, and hospitality sectors, among others, skyrocketed. In accordance with the stay-at-home orders, some businesses were deemed essential and permitted to continue work, provided they followed certain safety regulations pertaining to COVID-19. What followed was a national frenzy that resulted in citizens determining whether their business was to be deemed essential or non-essential. Different states began to take less or more strict stances on essential business and stay-at-home orders, further muddying the waters. To properly analyze the effects of the COVID-19 virus on a construction company, the effects on business must first be addressed.

Literature Analysis

The Impact on Business

The stay-at-home orders issued both in California and across the nation applied to any business not deemed essential. Many of these essential businesses included hospitals, grocery stores, and to a certain extent, construction. A study was done by the University of Oxford to predict the supply and demand shock due to the pandemic. The study found that the U. S's GDP could be threatened by 22%, jeopardize 24% of jobs, and could reduce total wage income by 17% (Maria del Rio-Chanona, 2020). The study also predicted that 38% of the bottom quartile of wage earners and 6% of upper quartile wage earners were in jeopardy of losing their jobs. This study was conducted and published in April



Interactive Map by Jon Keller

Non-essential construction stopped. Stay at home.	■
Construction restricted in some counties. Stay at home.	■
Construction unrestricted. Stay at home.	■
Construction status unclear. Stay at home.	■
Construction unrestricted. No "stay at home" order.	■
Construction restricted in some counties. No "stay at home" order.	■
Non-essential construction stopped. No "stay at home" order.	■
Non-essential construction stopped. Stay at home in some locations.	■
Construction restricted in some counties. Stay at home in some locations.	■
Construction unrestricted. Stay at home in some locations.	■

Figure 1: Current status stay-at-home orders by state.

2020 and the authors cautioned that these were only predictions for a first-order shock, a second order shock could substantially increase these numbers. Despite some businesses falling to the unforeseen implications of a global pandemic, others were booming. The fast-food restaurant Arby's reported servicing 50% more customers at lunch with a 50% increase in overall volume with many customers completing large orders (Littman, 2020). Littman explained how restaurant owners were beginning to see the need for more drive thru lanes in their buildings which in turn could provide more construction opportunities for contractors.

The Impact on Construction

Before the COVID-19 stay-at-home orders were issued, the impact on construction was not well known. As more and more states began to issue these orders throughout the months of March and April 2020, a state of panic arose as some states completely shut down construction while others deemed it essential (ENR Editors, 2020). This, coupled with certain states' relaxed or strict position on stay-at-home orders, left many construction businesses unsure of the future. After the initial panic brought on by this sudden pandemic, businesses began to gain a clearer perspective on the impact of the crisis. For some, mainly in the sectors of warehouse and healthcare construction, the consequences were not so harsh. However, for those in the sectors of retail, lodging, and office construction the impact was severe. Retail, lodging, and office construction was expected to shrink by 64%, 58%, and 58% respectively (Bousquin 2021b). Figure 2 shows the spread of construction sectors and their projected growth value for the year 2021. The figure shows that 13 out of the 16 construction sectors were expected to shrink in 2021 with an average decrease of 28%. Due to the severe drop in demand

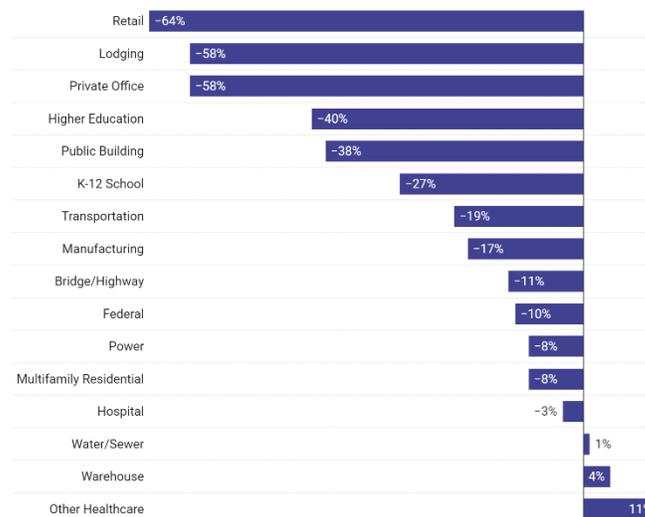


Chart: Zach Phillips | Construction Dive • Source: AGC • Get the data • Created with Datawrapper

Figure 2: Expected construction growth 2021

for certain projects types, many in the industry attempted to alter the types of projects they were pursuing. A prime example would be the increase in drive-thru style restaurants and the renovation of existing restaurants to incorporate larger, faster drive-thru systems (Littman, 2020). While increased innovation is undoubtedly a benefit in the construction industry, many firms saw their numbers drop when it came to new and existing projects. Chief economist for the AGC, Ken Simonson, stated that 44% of firms reported having some of their projects canceled in 2020 with no reschedule (Bousquin 2021b). Simonson also reported, “Even for this first half of 2021, 18% of firms report that projects scheduled to start between January and June have been delayed, and 8% report projects scheduled to start in the first half of this year have been canceled” (Bousquin 2021b). Additionally, Rosana Privitera Biondo, president of Kansas City, Missouri-based Mark One Electric Company, stated that she has roughly 40 to 50 general contractors all with different protocols and requirements to deal with COVID-19 (Bousquin 2021b). Biondo explained how this unanticipated cost has significantly impacted subcontractor’s bottom lines, equaling hundreds of thousands of dollars in lost revenues. The chances of business returning to normal largely rested on whether a vaccine could be made available to the public immediately. According to a statement made on December 29, 2020, then President-elect Joe Biden said he would ask the Occupational Health and Safety Administration (OSHA) to reconsider its refusal to implement emergency standards for workers in response to the

COVID-19 pandemic (Tornone, 2021). These emergency standards would result in additional standards to be met as well as increase OSHA's policing power over construction jobsites. Despite the negative implications on the construction industry due to COVID-19, there are some positives that can be identified. Biondo, despite the negative aspects of COVID-19, explained how management will persevere as a company by streamlining operations, cutting unnecessary costs to conserve cash, and expanding job searches to new areas. In Littman's study, the need for additional drive thru lanes at restaurants could create opportunity in the construction industry (Littman, 2020). A study by the AGC demonstrates how some construction sectors were also expected to grow in 2021 such as healthcare and warehouse construction. With some sectors of construction significantly impacted and other continuing to grow, how can we properly assess the impact on a single commercial construction company?

Methodology

The impacts in 2020 and 2021 were varied for different construction companies; however, they have all had to either adapt or fall to direct and indirect challenges. The direct impacts of COVID-19 could be defined by construction regulations put in place by OSHA and the CDC, increased documentation and workplace protocol guidelines, routine workplace cleaning, wearing masks at the workplace, among others. Indirect impacts could include impacts made on the preconstruction processes, closeout processes, job procurement, among others. Both impact categories could have a substantial effect on a construction company. In the construction industry, successful companies rely on proper planning and foresight; two aspects that can be difficult to implement amid a pandemic. Therefore, it is just as important to analyze how COVID-19 has affected these construction companies indirectly, primarily through aspects such as future planning. While the company can possibly be affected as a whole, individual members could have their own individual jobs impacted much more severely than others within the same company. For example, a preconstruction director, in charge of procuring work in the future, might feel much more added stress to their work profile than a foreman, responsible for extra cleaning of facilities and ensuring the use of masks onsite. While both can be impacted by the pandemic, it cannot be denied that some positions would be impacted differently than others.

Research Questions:

1. Identify and analyze the direct impacts of the COVID-19 pandemic on the field and office employees and work production of a commercial construction company.
 - How has your specific position been impacted by COVID-19 regulations? Has this developed or changed from the beginning (Jan 2020) to the present?
 - What are the top 3 ramifications of COVID-19 both for your position and the company as a whole?
 - What changes, if any, have you noticed in site productivity due to COVID-19 regulations?
 - How have OSHA and other inspectors enforced these regulations on site?
 - What changes, if any, have you noticed in the amount of documentation and notices resulting from COVID-19?
 - What changes, if any, have there been in company policies due to COVID-19?
2. Identify and analyze the indirect impacts of the COVID-19 pandemic on a commercial construction company.
 - What changes to the Preconstruction processes have been made to adapt with COVID-19?
 - What changes to the Closeout processes have been made to adapt with COVID-19?
 - What changes to the job procurement processes have been made to adapt with COVID-19?

- Has there been a change within different sectors of construction? Are there any jobs you now avoid/pursue because of COVID-19? If so, please explain.
 - Have there been changes to relationships with potential subcontractors, suppliers, owners? Has COVID-19 affected these parties in a way that further affects your company? If so, please explain.
3. Identify and analyze what solutions can reduce the impact of COVID-19 on a commercial construction company.
- Have you noticed any positive opportunities resulting from COVID-19?
 - Has private construction been able to cut through any red tape due to COVID-19?
 - What policies within a company could be implemented to take advantage of the COVID-19 pandemic?
 - If you could turn one negative of COVID-19 into a positive, what would it be and why?

To successfully meet these objectives, the researcher gathered mostly qualitative data from semi-formal interviews with Dempsey Construction Inc. Dempsey Construction Inc. is a commercial general contractor based in Carlsbad, CA. They are a medium sized company with roughly 50 employees. The semi-formal interview platform ensured that the researcher gathered information specifically regarding the case study objectives while also allowing new information to be introduced throughout the interview. To analyze the affects on different members within the construction company, there were a broad range of positions interviewed described as the following: foreman, superintendent, project manager, senior project manager, office manager, preconstruction director, vice president of operations.

Data & Results

Project under review for field employees: Fairfield Inn & Suites Mission Bay, CA

- 58,000 SF.
- 3-story, 106-unit hotel.
- features a pool, fitness center, an outdoor patio area with custom breakfast/dining area, concrete podium deck and covered guest parking.
- In process for roughly 1 year, schedule to finish in May 2021.

Foreman: The foreman interviewed worked on the above project throughout its entirety and questions were related to this project only. The foreman observed that while his role has been affected by COVID-19, it has not been so severe that his production has decreased. He observed that the cost of complying with the OSHA mandate on COVID-19 were relatively low, at least for daily tasks onsite. He assessed that COVID-19 could potentially delay subcontractors in procuring materials and labor however there were no concrete examples for the project thus far. He stated the close-out process could potentially take longer on this project than normal due to COVID-19. He also identified how the owners have much less of a presence both with the general contractor and the subcontractors due to meetings being held via Zoom and not in person. In fact, the foreman described how he believed Zoom will be used much more often in future projects and how this could decrease the benefits of face-to-face meetings. While everyday work must be done while wearing masks, the foreman explained how this was important to ensure the safety of everyone onsite. Similarly, because high traveled areas on site required studios cleaning per OSHA COVID-19 protocol, the site was much cleaner and benefited the workers.

Superintendent: The superintendent stated that COVID-19 had a significant impact on his job role. The jobsite must be cleaned multiple times daily, employees must wear masks during work, and always keep 6-foot distancing. Resources like time, money and manpower must be allocated to adhere to these regulations. Construction jobsites that fail to comply with these regulations could be shut down for up to two weeks. Understanding these guidelines was important, but an additional factor was keeping up with the new changes to the guidelines as the superintendent reported that they were everchanging. Ensuring the agreement of the inspectors was important during the pandemic as not following the regulations in place could cause them to report the project. Due to the changing needs of the hospitality industry at the time of opening, changes to the building had been discussed. The owner had discussed implementing more automation throughout the building, especially in areas such as the breakfast room and lobby. This would allow the hotel to better serve its clients and remain open during the pandemic. It was brought to attention by the superintendent that being sick from COVID-19 was now a reason subcontractor companies might not report to work. While the superintendent stated that it has not been used negatively thus far, it may become part of future contracts with subcontractors to ensure there is not abuse of the system. While there have been numerous negative impacts, the superintendent explained how the pandemic was allowing him to have more direct interaction with the safety of those on the jobsite. This helped to create more caring atmosphere as workers onsite were truly concerned about their peers becoming infected with COVID-19.

Project Manager: The project manager stated that his job had been impacted by the COVID-19 pandemic. Tracking employees both at Dempsey and subcontractor workers became much more important than previously. With some subcontractor workers testing positive to COVID-19, ensuring these subcontractors had enough workers onsite to perform the job became important. At the time of interviewing, the project manager explained how accounting for the regulations in place for COVID-19 had become a standard. Company policy surrounding COVID-19 was made to mirror the CDC guidelines. The project manager stated that the company's ability to grow had not been affected by the COVID-19 pandemic; however, it had required them to pivot to continue as a profitable business. The retail sector was the most impacted for future projects during the strict lockdown orders of COVID-19, yet the project manager explained how Dempsey was awarded its largest project of the year in retail. To cope with an increased lead time for materials, the project manager explained how he was calling manufacturers personally to enquire about specific items and if their lead times had been affected by COVID-19. The project manager stated how Zoom meetings had become commonplace amidst the pandemic and that these forms of meetings were highly inferior to in-person meetings. In-person meetings allowed people to be held more accountable for their work and were very important in solving technical problems throughout the construction process. The project manager also explained how some owners have taken to rebidding their projects to secure a price reduction due to work having been more competitive than before the pandemic. Despite the negative aspects of COVID-19, the project manager explained how the leadership of employees had excelled during this crisis.

Senior Project Manager: The senior project manager stated that his job had been impacted by the COVID-19 pandemic, especially regarding work opportunities. Due to COVID-19, the senior project manager explained, sectors such as hospitality and office had been impacted to the point where the company was not focusing on work in those sectors. Instead, they were finding large amounts of work in the industrial and warehouse sectors and were expending more energy to find these jobs. Certain geographical areas were also doing better than others, specifically Otay Mesa. In addition to potential work, daily tasks had also been impacted by COVID-19. The senior project manager explained how having specialized workers allocate time to wipe clean surfaces in the office was not great allocation of resources. With COVID-19 creating a reduction of available work, Dempsey had to compete at a higher level for work, however subcontractors had to do the same. The senior project manager

explained how this resulted in subcontractors bidding more projects and having more aggressive pricing. The COVID-19 pandemic had also required the company to be more proactive when selecting and procuring materials. The senior project manager stated that COVID-19 resulted in the flexibility of remote work especially through platforms such as Zoom and Microsoft Teams. Before the stay-at-home orders, the senior project manager inferred that 90% of meetings were in person. While using these platforms significantly reduced travel time, the senior project manager argued that in person meetings were still better.

Office Manager: The office manager stated that the impact COVID-19 had on her position evolved over time. At the start of stay-at-home orders in March 2020, her position shifted to ensuring Dempsey employees had everything required to work remotely. There was low office attendance in the beginning as ensuring employees' safety was the top priority. The office manager noted that, after time, more people began to return to work, resulting in implementing more safety measures around the office. The AGC had also been notifying contractors of proper safety measures and upcoming changes to protocol which the office manager stated had been helpful to the company. The office manager explained how Dempsey had been bidding more work to keep their immediate future busy with projects yet staying away from areas that were struggling such as retail. The office manager stated how there were no positives to this experience as jobs being less available had made everyone in the company work much harder to stay afloat.

Preconstruction Director: The preconstruction director reported that his position had changed during the COVID-19 pandemic especially at the beginning of the stay-at-home orders. He recounted the difficulties of having a bid day remotely, explaining how not being able to use their public filing system usually required for large projects could slow down their process anywhere from two to four days. Additionally, jobsites could not be walked prior to bidding like they could previously. Schedules had also been impacted to comply with having fewer workers on the jobsite at a given time. Indirectly the preconstruction director's position had been impacted by a dramatic change in job procurement. The retail industry prior to the COVID-19 pandemic was growing rapidly and Dempsey was heavily focused on the retail sector. The preconstruction director went as far as to say that retail was dead, at least at the time of interview. The office sector and tenant improvements were also areas the preconstruction director highlighted as heavily impacted by COVID-19. Due to the major decrease in available tenant improvements, the preconstruction director explained how many contractors that had no experience in ground-up construction were flooding to it in order to stay afloat. The preconstruction director also explained how the COVID-19 pandemic has caused the supply for material to decrease yet the demand stayed very high. Developers were shocked because they believed that prices of materials should be decreasing during a pandemic, however the opposite was occurring. Zoom has been replacing many meetings and even phone calls, explained the preconstruction director. He believed that there will be a lasting effect of these remote meeting platforms in the construction industry. Despite the negative impacts of COVID-19, the preconstruction director explained how there was a human factor to the pandemic. Even with their company being impacted, the preconstruction director knew that they will and can endure through hardship and that humans rarely decide to sit back and let circumstances overwhelm them.

Vice President of Operations: The vice president stated that to ensure that other employees were able to work less and focus on specific tasks, it was up to him to work harder in the midst of the COVID-19 pandemic. One of the harder jobs for Dempsey had been predicting the future amidst this crisis. The company lost approximately \$40 million in projected job value for the year of 2021, with retail and hospitality being the hardest hit sectors for them. The vice president explained how they strive to have their business in as many sectors as possible, using a stool with multiple legs analogy. The more legs the stool has, the less of an impact on stability if a few are broken. Fortunately, the vice president

explained how they were a conservative company and, although they had been hit hard in certain sectors, they had remained stable and could even identify further possibility. To make up for their projected losses in 2021, the company began to bid more work, especially in sectors that were doing well during the pandemic such as warehouse and biotech. Because of their lost work, the company needed to be more proactive about bidding, especially in areas that were successful despite the pandemic, and they eventually recuperated all \$40 million of their projected loss. The vice president also pointed out that they were able to come together as a team when the company needed it the most and this was a process that weeded out potentially bad companies that were not being conservative and did not have a strong foundation.

Conclusions & Future Research

Dempsey Construction Inc. was heavily impacted at the start of the COVID-19 pandemic with stay-at-home orders, clean workplace regulations and a loss of projected work totaling \$40 million. Over time, the initial frenzy and panic of the pandemic became more of a standard set of regulations as more information was discovered about the virus and how it spread. While deemed an essential business and permitted to remain open in the state of California, Dempsey was still impacted both directly and indirectly by COVID-19. In addition to schedule adjustments, daily cleaning on jobsites and in the office, and increased material prices and lead times, Dempsey also had to contend with the unknowns of the future. Projected job loss, subcontractor and developer relationship changes, and the crash of specific construction sectors were all indirect impacts that Dempsey had to contend with amidst the pandemic. Despite the negative impacts of the pandemic, many employees were able to find positive changes due to COVID-19. The worker relationship onsite became more caring, time spent traveling to meetings was significantly reduced, and on a more personal level many employees were able to spend more time with their families. The COVID-19 pandemic was not only a test for individual employees but for also the company. By remaining strong as a company and eventually recuperating all their project losses, the COVID-19 pandemic was testament that Dempsey was able to weather the storm and showcased their team spirit's ability to shine in dark moment. Dempsey Construction Inc. was not the only company in the construction industry that was affected by COVID-19. Reviewing this specific company will hopefully encourage more studies on other companies in all sectors of construction and the impact that the COVID-19 pandemic had on their companies.

References

Bousquin, J. (2020, December 21a). *Can the pandemic's construction lessons help Biden boost infrastructure?* Construction Dive. <https://www.constructiondive.com/news/can-the-pandemics-construction-lessons-help-biden-boost-infrastructure/592436/>.

Bousquin, J. (2021, January 11b). *The 13 construction sectors contractors expect to shrink in 2021.* Construction Dive. <https://www.constructiondive.com/news/the-13-construction-sectors-contractors-expect-to-shrink-in-2021/593103/>.

Bousquin, J. (2021, January 20c). *6 owners moving ahead IN construction's HARDEST-HIT sectors.* <https://www.constructiondive.com/news/6-owners-moving-ahead-in-constructions-hardest-hit-sectors/593430/>.

Bousquin, J. (2021, January 12d). *California enacts strict new COVID-19 notification law*. Construction Dive. <https://www.constructiondive.com/news/california-enacts-strict-new-covid-19-notification-law/593192/>.

ENR Editors. (2020, July 23). *State-by-State Coronavirus Construction Status Updates*. Engineering News Record RSS. <https://www.enr.com/articles/49013-state-by-state-coronavirus-construction-status-updates>.

Hollingsworth, J. (2020). CONSTRUCTION SAFETY PRACTICES FOR COVID-19. *Professional Safety*, 65(6), 32-34. Retrieved from <http://ezproxy.lib.calpoly.edu/login?url=https://www-proquest-com.ezproxy.lib.calpoly.edu/scholarly-journals/construction-safety-practices-covid-19/docview/2409675000/se-2?accountid=10362>

Keller, J. (2020). *Figure 1: Current status stay-at-home orders by state*. URL <https://www.enr.com/articles/49013-state-by-state-coronavirus-construction-status-updates>

Littman, J. (2020, December 4). *Pandemic revs up drive-thru restaurant design*. Construction Dive. <https://www.constructiondive.com/news/pandemic-revs-up-drive-thru-restaurant-design/591525/>.

Phillips, Z. (2021). *Figure 2: Expected construction growth 2021*. URL <https://www.constructiondive.com/news/the-13-construction-sectors-contractors-expect-to-shrink-in-2021/593103/>

R. Maria del Rio-Chanona, Penny Mealy, Anton Pichler, Francois Lafond, Doyne Farmer. (2020). Supply and demand shocks in the COVID-19 pandemic: An industry and occupation perspective. [WWW Document]. URL <https://arxiv.org/abs/2004.06759v1>

Tornone, K. (2021, January 14). *Biden will ask OSHA to reconsider decision to skip emergency coronavirus standards*. Construction Dive. <https://www.constructiondive.com/news/biden-will-ask-osha-to-reconsider-decision-to-skip-emergency-coronavirus-st/593386/>.

