The Construction Industry & COVID: ***Where Do We Go from Here?***

By Hal Routh, September 1st, 2020

The goal of this white paper is not to address exhausted topics, such as jobsite safety impacts, protocols, masks and social distancing. These points have been exhaustively reviewed, discussed and analyzed. There is little left to say on these subjects. Rather, for purposes of this white paper, we are concerned with how we return our construction businesses to maximum profitability as fast as possible. We will address the questions of: What now? Where do we go from here? and Where should we deploy our resources, time and energy moving forward? **Specifically, this white paper is about returning our businesses to prosperity as fast as possible. It will require a pivot.**

We will identify the winners and the losers. We will explore the various market sectors and the geographies to predict where the fertile ground is and conversely where recovery will be sluggish. Our predictions are just that- predictions. But they are predictions based on extensive research and the gut instinct of countless industry insiders. In support of this publication, our team has conducted extensive industry research spanning from in-depth conversations with construction executives across the country, to analysis of government data, reports and other reliable sources of real time information. We have interviewed countless experts across all market sectors from universities, municipal government, private developers and private equity firms.

We have consulted economists, architectural firms and trade organizations. We have read numerous publications and research papers. **The bottom line—we have scoured the construction landscape so you don't have to.** Here is what we have learned. Buckle up!

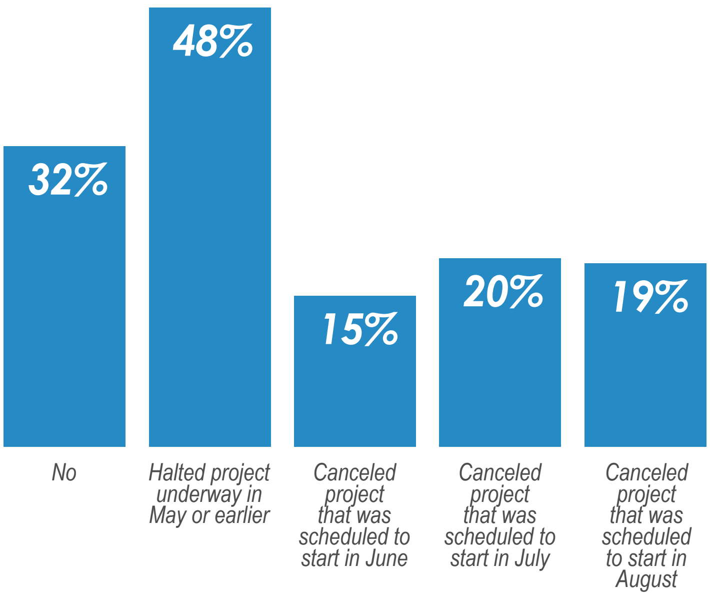
THE BEST OF TIMES & THE WORST OF TIMES

A mere seven months ago, we were in the best of times. We were in the midst of the longest economic expansion in the history of our country. We had real GDP growth of 2%, a rise in real wages, low unemployment and a 50-year low in inflation. The writer of this white paper facilitates a peer group of large construction companies from across the US and each of these companies remarked on how they entered 2020 anticipating the best year in the history of their firms. And not one firm was an exception to this comment. Times weren't good—they were great.

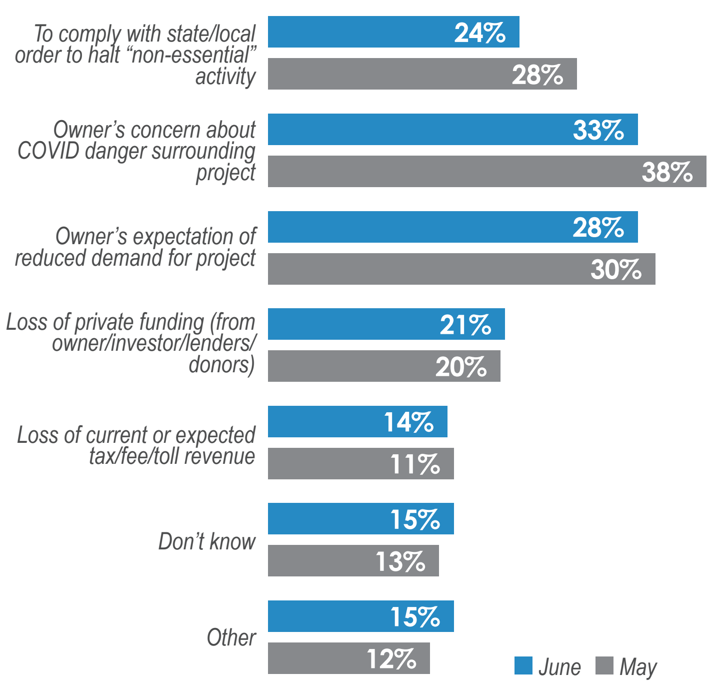
And then it happened! COVID came and our economy slid into a recession. The impacts of COVID have threatened global economic stability—rising unemployment, declining consumer spending and declining GDP. In the US, GDP fell by 5% in the first quarter of 2020 and 33% in the second quarter, marking a new period of recession.

The construction industry has not been immune, with project delays and cancellations as well as increased costs to manage the safety concerns brought on by the pandemic.

In a Corona virus survey of 633 contractors conducted in June by the AGC, ~68% or 430 respondents had an owner that halted or canceled a project planned or currently underway. Most of those respondents (48%) had a project that was delayed in May or earlier and ~54% had a project canceled that was scheduled to start in June or later. (See AGC Survey results below.)

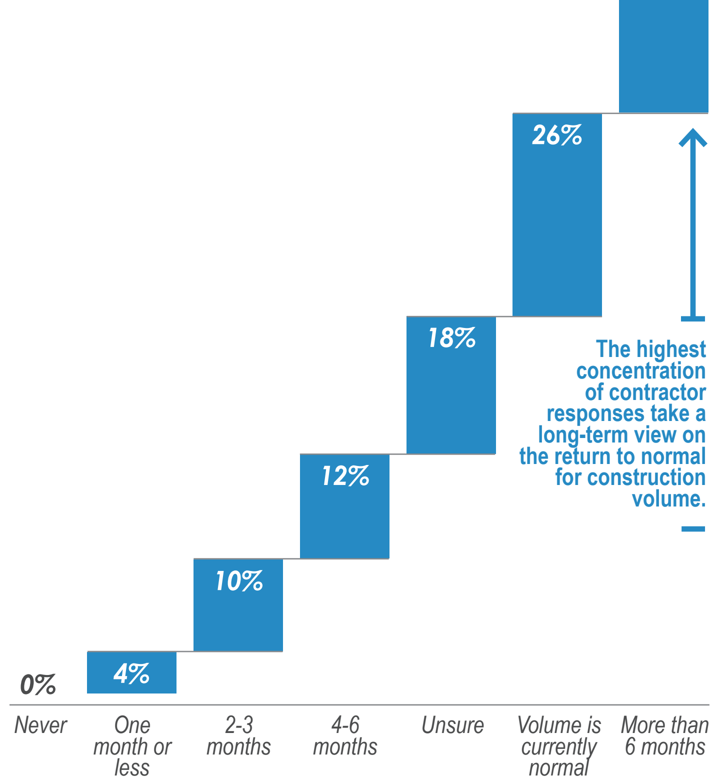


When probed on causes behind owner project cancellations and halts, COVID's danger surrounding the project was of utmost concern. However, as time passes, owner delays are expected to become more economic related than health related, as owners question demand for their construction investments. (see AGC results below.)



Looking forward, most respondents (56%) are at a cross between currently experiencing normal business volumes and anticipating them to return in more than six months. This further displays the fragmented impacts of COVID on construction operations across different sectors and geographies. The highest concentration of contractor respondents has taken a long-term view on recovery for construction volumes. No respondents indicated that volumes would never return to normal and 52% answered that business volumes were currently normal or expected to be within six months or less. Most industry professionals believe the impacts of the COVID epidemic to be a temporary setback. (See AGC survey below.)

When do you expect your firm's volume of business to return to normal (relative to one year ago)?



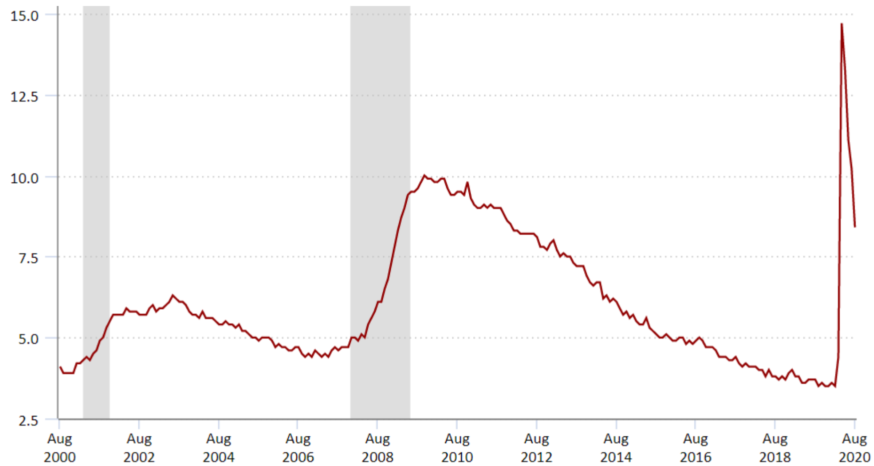
THE GOOD, THE BAD, & THE UGLY

Some good news. Many economists believe we are at the bottom of this economic slide. Unemployment claims are slowing, while demand for goods and services are picking up. Businesses have learned to adapt. People have acclimated to doing business virtually and/or by social distancing and wearing masks. And despite the panic perpetuated daily by the mainstream media, most states are showing positive trends in less COVID cases and fewer hospitalizations. Also, the healthcare industry has learned how to treat COVID more effectively and thus death rates appear to be declining. And of course, there is much optimism for a vaccine by late 2020 or early 2021.

And while all of this is conjecture and subject to major setbacks should there be a secondary spike, there is optimism that we have realized an economic trough.

In fact there is evidence to support that the bottom has been hit as unemployment has decreased rapidly, peaking in April at nearly 15% but steadily declining to 11% by June and to 8% by July. In addition, the single family housing market has basically returned to pre-COVID conditions across many areas of the country.

US Unemployment, August 2000 – August 2020



Source: U.S. Bureau of Labor Statistics

As for the construction industry, while our bottom is still forthcoming, there are market indicators suggesting that construction setbacks are anticipated to be short in duration. For example, note the upward trend of the Dow Jones U.S. Construction & Materials Index. The index shows a steady gain since bottoming out in late March. As these numbers are based on anticipated future values, this is evidence suggesting that the market is viewing COVID to be a temporary setback to the construction industry. The big question—how much of this confidence is driven by the surging housing market? What about commercial construction?

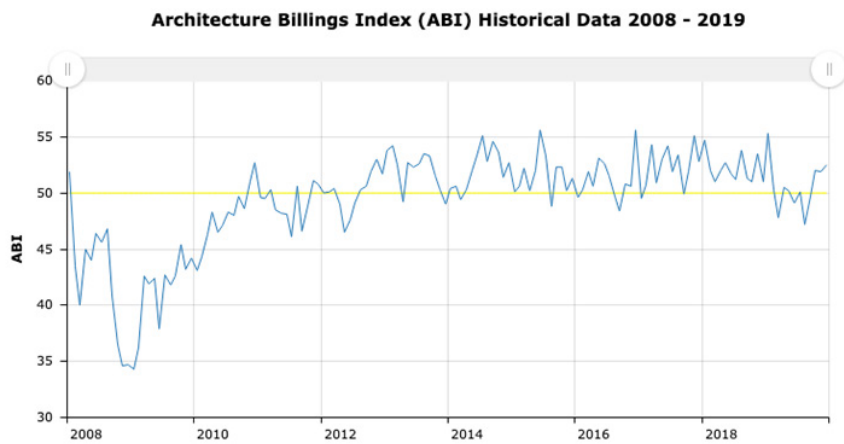
Now some bad news. The COVID crisis has seen a mass of government spending required to control infection and supplement lost wages. And coupled with tremendous losses in income taxes, sales taxes and public institution tuition, there is a tremendous strain on federal, state and local government budgets. As one mayor told us, *"Our sales tax revenues are down by more than 80%—that changes everything."* In the Great Recession, there was a flow of public construction dollars being awarded, acting almost as a defibrillator for the construction industry. With these budget strains, the public sector may not be our industry's salvation this time around.

The Ugly. The construction industry is a lagging industry. The industry is typically 12-18 months behind most industries in economic cycles. In fact, the construction industry lags the architects very directly. Simply put, if architects aren't designing this year, we aren't building next year.

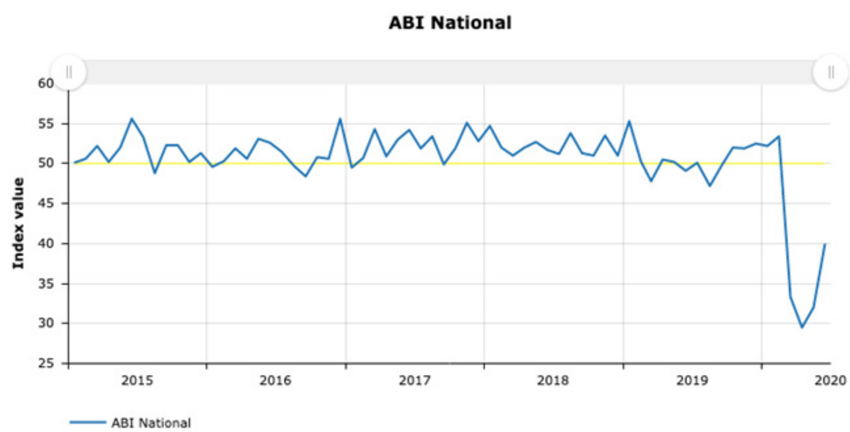
Approximately 50% of architecture firms reported fewer design projects in an AIA survey ending March 23rd. Two-thirds of those firms reported projects that had either slowed down or ceased and more than 90% anticipated declining revenues in April. All of this provides some foreshadowing for the commercial construction industry. The Architectural Billings Index is a key economic indicator for nonresidential construction activity. A score below 50 indicates a decrease in firm billings versus the previous month. The index hit a previous all time low in 2009 at 34 and we know how real that prediction became to our industry in 2010, 2011 and 2012. That record low was broken in April of 2020 at 29.3. The indicator has been rising steadily since but is still below the 50 threshold.

Conclusion. There may be a drought in commercial construction opportunities in 2021, making 2021 the construction industries low point. But we believe that once we get through 2021, things will turn quickly.

National Architecture Billings Index



National Architecture Billings Index



THE GREAT RECESSION vs THE GREAT SHUTDOWN

The events that transpired during the Great Recession between 2007 and 2009 were driven by fundamental issues in our private markets as a result of sub-prime mortgage lending and vulnerabilities in our financial system. This placed a significant strain on private lending and development particularly in our residential markets. Total construction spending in the US took its biggest tumble by more than 15% in 2009 and residential fell by 29%. Surprisingly, public construction grew during this time and was able to offset some of the spending losses in our private markets. This was partly driven by the ARRA (American Recovery and Reinvestment Act) stimulus, following the 2008 election. The rationale behind the ARRA's $831 billion in funding was based on Keynesian Economic Theory, meaning that governments should offset the decline in private spending with increases in public spending in order to eliminate further economic deterioration. For the construction industry the impact was moderate, but it provided a lifeboat to adaptable contractors who were able to pivot into or increase their portfolio exposure in public work.

A global pandemic strikes a new scenario, where external forces of nature grapple with the growth and function of our economy. This is a new recession, not brought on by fundamental flaws and fraudulence, but by the impacts of COVID and our response to managing its threat to our people.

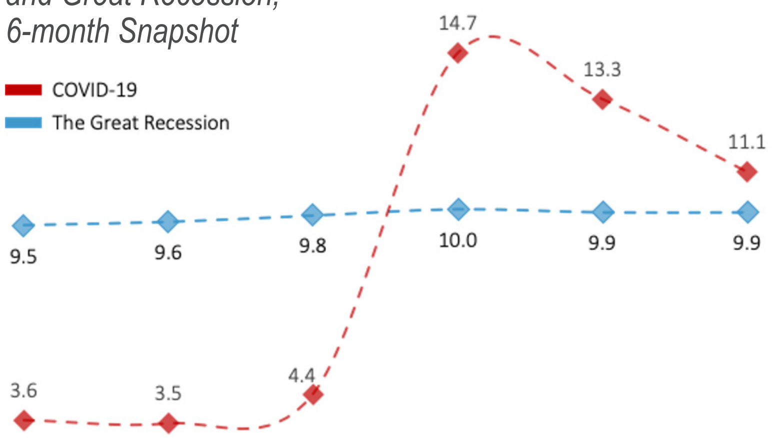
Dr. Joey Van Neesen, economist with the Darla Moore School of Business at the University of South Carolina, noted in a recent Carolinas AGC virtual summit, *" 2009 was the onset of The Great Recession."*

What we have today is The Great Shutdown. The basic difference being that the first was caused by underlying economic fundamentals, while the most recent was mandated by public health concerns. The distinction is important. In the Great Recession, the economy slowly dissolved and the comeback was tremendously sluggish and painful as the credit markets were paralyzed.

Conversely, while the economy suffered more intensely and with more abruptness in The Great Shutdown, the economic fundamentals, namely lender institution health, consumer home equity preservation and healthy corporate balance sheets make this recession a "demand" side recession. The theory—as the economy opens back up, demand returns quickly and the economy recovers. This is the "V shaped" recession we have heard so much about. Neeson went on to say that whether it's a "V" or a "U," the bottom line is that the length of the recession should be shorter and the recovery should be quicker.

The difference in abruptness and speed to recovery can be seen when comparing the impacts to unemployment as seen in the six month snapshot below.

Peak Unemployment During the COVID Recession and Great Recession, 6-month Snapshot



A few variables in determining the speed of recovery are the timing of a vaccine, our ability to manage infections and any secondary spikes. Regardless, most economists expect growth to begin in the 3rd quarter and a return to 2019 GDP levels by 2023.

DEBT FINANCING PRESSURES

As it relates to private development, financing options have become more conservative as lenders want developers to have "more skin in the game." As a result, loan to value ratios have fallen by 5% while debt service coverage ratios have risen. Loan to Values (LTV) are now 75-80% in multi-family, 70-75% in industrial and 65-70% in retail and office. This means developers must obtain more equity to make their deals work and equity is much more expensive than debt. All of this will put pressure on developers and slow down our recovery forward. We all need to keep a close eye on this. But our view is that as the pandemic subsides, a vaccine is realized and people go back to work, the credit will loosen back to previous levels very quickly.

FEDERAL & STATE STIMULUS

The current circumstances have resulted in stimulus packages by congress, with most of the benefits focused on household incomes, preserving employment and health provisions to support infection control and research.

As far as direct stimulus dollars into shovel ready projects, as was the case in the Great Recession, there is some optimism that there might be appropriation bills dedicated to infrastructure spending. Both Democrats and Republicans have suggested proposals ranging from $1 to $2 trillion, with increases to federal gas taxes. There is also scuttlebutt about state plans across the country to fund highway projects through the raising of state gas taxes. But these plans are not definite and are unlikely to gain traction until after the November election.

After speaking with several insiders within the life sciences industry, there is evidence that considerable dollars are flowing from the National Institutes of Health into the private sector in the form of research grants. Basically, the premise is that our country got caught with "its pants down" on this COVID thing and we need to take a "never again" approach to researching where the next pandemics will come from, how to predict them and how to head them off. This could represent significant dollars flowing into this sector from both the government and from venture capitalists for years to come.

THE PIVOT

As I think about where we are today, I can't resist a sports analogy. I certainly don't pretend to be an expert in hockey. Heck, I grew up where a pond never freezes over. But I do know that Wayne Gretzky was "The Great One." I have heard experts describe what made Gretzky so special. It was not that he was the fastest skater, or that his puck handling was far superior to other elite players of the day, or that he could shoot the puck with much more velocity and accuracy. Rather, it was said that when all the others would skate "to the puck," Gretzky would skate "to where the puck will be." As a result, the puck ended up on his stick in open ice or open shooting lanes frequently. And he capitalized. The Great One!

The rest of this white paper is dedicated to "skating to where the puck will be" so that we can beat the competition and win far more than our share. And so what if your competitors read this—they will keep doing what they have always done despite a changed marketplace. A pivot requires discipline and most construction firms simply don't have it. You need a strong strategic reset and a disciplined execution plan.

THE GREAT DIASPORA

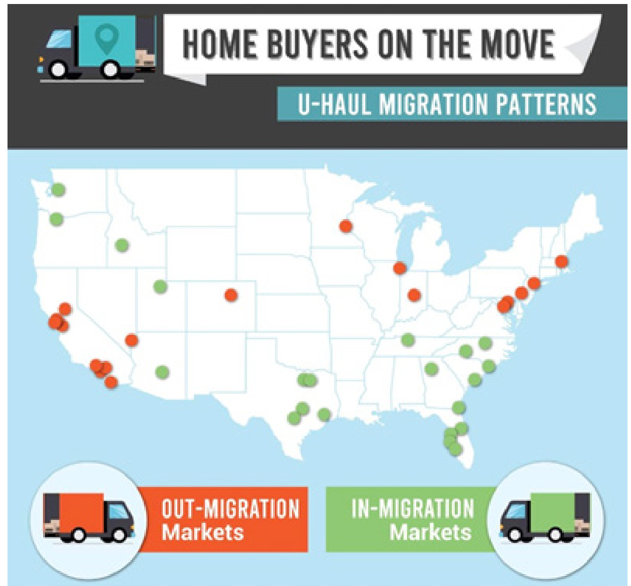
The Merriam-Webster dictionary defines a diaspora as the movement, migration or scattering of people. We have all heard the story—after COVID, there will be a mass migration of people from some parts of the country to other parts. Simply put, people desire to depart highly dense areas in favor of less dense areas of the country. A recent study cited by The New York Times estimated as many as 420,000 New York City residents had recently fled the city. Some estimate the total could actually be more than one million people. Most of the migrants have cited the Corona virus, the shutdown and the protests as their biggest factors in making the move. There is already downward pressure on rental rates in NYC as apartment units become available as demand has lessened. This diaspora will continue.

California and the Pacific Northwest are experiencing similar outward migration patterns. Much of this was occurring pre-COVID and was fueled by concerns over tax rates, cost of living, the homeless crisis and political unrest. In fact, as many as 86,000 Californians moved to Texas alone in 2018 according to Yardi Systems, a property management firm. And it has intensified during COVID. This diaspora will continue.

As more and more workers see a world in which they can work remotely, where they reside is no longer dictated by their employer or chosen career. As a result people will continue moving to areas of the country where the cost of living is lower, where there are less dense living environments and where political and social unrest is less intense.

There will be net population winners and net population losers. Those who win will see increased tax bases, increased home values and new demands for infrastructure and services. Employers will follow the talent so there will be headquarter relocations and plant relocations as well. As a result, the net population winners will see a surge in commercial construction activity post-COVID and for years to come as new roads, new schools, new office buildings and new residences are built. But there will obviously be net population losers as well. And these geographic markets will return to pre-COVID vitality very slowly and maybe never for some.

The map below is data from U-Haul, showing markets of in-migration and out-migration. The bottom line is if a construction company is contemplating growth, one should focus on where the people are going.



MARKET SECTORS – WHERE ARE THEY HEADED?

As we discuss the various market sectors, we will analyze each sector in the context of three points of view: What We Know, What We Think We Know and, Our Big Questions. We will also rate the sector based on its attractiveness for focused pursuit in the near term (2-3 years).

The three ratings are:

G ***Go*** This simply means that circumstances are favorable for significant pursuit opportunity and sector vitality.

N ***Neutral*** This simply means that the sector is stable and has some potential for rebound given certain variables, but is not deemed to be robust in the near term. If you are invested in this sector, stay relevant. If you are not invested in the sector, only jump in if it's a very long term play.

C ***Caution*** This simply means that indications are that this sector is in for a rough go in the near term. And it may be a tough go for quite some time. If you are invested in this sector, you may want to consider a partial divesting and reallocation of resources to another sector. If you are not invested in the sector, stay clear.

Single Family Housing

What We Know: While this paper is dedicated to commercial construction predictions, we include single family housing because our economic comeback will be kick started by housing. In the early COVID period we saw a sharp decline in housing starts, followed by a rebound in new home sales in June, up 16.6% and in July up 13.8%, the greatest increases in new home sales in the last decade. We expect this demand to fuel new construction, especially in areas of inward migration. Basically as home construction slowed in the first and second quarter of 2020, interest rates went down while white collar workers retained their jobs. These combined factors generated a surge in home sales. And since there were few homes built in the months March-May, we have a shortage of inventory. Construction starts will continue to gain steam in areas winning in the post COVID population shuffle.

What We Think We Know: We think interest rates will remain low. This could drive single family housing construction for the next couple of years. Although, this could be a tale of two cities, with population moves hurting some geographies while others prosper.

Our Big Questions: If the vaccines fail and we have significant secondary spikes, will the economy drag and now put pressure on the so far immune white collar jobs? If so, housing will be impacted. But, we do not expect this scenario.

Our Outlook: G *GO!*

Multi-Family/Mixed-Use

What We Know: All housing, whether single family or multi-family will follow the migration of people. The Southern States and Texas will see increases in population, while highly dense cities in the Northeast will see decreases. We will also see a steady flow of people moving out of California and the Pacific Northwest, not so much due to COVID, but mainly due to social unrest, high taxation and the continued political polarity of our country. In the growing geographies, we expect significant growth in housing to accommodate the influx of people.

What We Think We Know: Multi-family will flip back from the urban center city sites to the suburbs for the near future. And we believe housing will become less dense, i.e. fewer high rises. We also expect clusters of development to pop up on the periphery of cities. As Chad Parker of Gensler noted, *"We expect more projects in outlying 'Urban Light' areas on the periphery of the city centers."* We also expect MF growth for government subsidized affordable housing and market rate housing outside of densely populated areas and we expect a stable luxury market. (Nothing like what we saw during the Great Recession)

Our Big Questions: How fast will the migration of people impact multi-family development? Will a majority of these projects be wood frame as the projects push to lower floor, less dense sites?

Our Outlook: G *GO!*

Higher Education

What We Know: In the short term, public Institution's budgets will be greatly limited due to decreased tax revenues and tuition losses. A certain percentage of students will not return to the previous norm and will demand more online learning and reduced tuition, putting pressure on the need for expanding the bricks and mortar of college campuses. And while many kids went back to campus in early to mid August, many are being sent home as COVID clusters on college campuses have arisen. This makes an already bad tuition bust at universities worse and pushes kids towards online learning once again.

What We Think We Know: In the Intermediate term, many kids will want to return to campus life. They will want the in-class, hands-on learning environment. They will want the "college experience." But the timing and degree of this come back may take a few years. Community Colleges will rebound first as some recent high school graduates will ease into the college life while living at home.

Our Big Questions: Did the COVID pandemic eliminate the stigma of online higher education forever? Maybe so. The degree to which this stigma has broken down could very well dictate the robustness of the Higher Ed construction market for years to come. A lot of unanswered questions in this sector.

Our Outlook:

C *Caution In Short Term,*

N *Neutral in Intermediate.*

Don't be overly concentrated here in the next 2-3 years.

K-12

What We Know: Like Higher Education, budgets will be greatly limited due to decreased tax revenues. And considering that some school systems will not return to the classroom in the Fall, new projects not already appropriated will be scarce in the short term. And remember, government is quite often slow to react, so even when students return to the classrooms, policy makers will be hesitant to spend the taxpayer's dollars until the economy has clearly turned. Don't expect a quick rebound in new work here.

What We Think We Know: Within the next 12 months, almost all school systems will reopen. And since kids do not seem to be at high risk to COVID, or even "carriers" in great levels, when they open they will fully open. We expect it to be business as usual within 12 months. We expect certain geographies to see increases in enrollments and others to see decreases as populations shift in the next 2 years. This demographic shift will play a big role in K-12 capital budgets.

Our Big Questions: As one blogger stated *"The largest school system in the state in 2020-21 will be home schools and private schools combined. This has huge implications for… public education generally."* Will there be a surge in homeschooling? Will private schools grow as families pursue less dense learning environments?

Our Outlook: N *Neutral*

Commercial Office

What We Know: As we all know, a majority of office workers have been working remotely. Companies have learned two things: 1) their workforce can be productive at home and 2) remote working can save considerable overhead dollars. Many companies will encourage their workers to stay home for at least 50% of the work week in the next 12-18 months for safety and as a cost savings strategy. In the short term, this will put pressure on new office construction as space needs diminish.

What We Think We Know: While we expect office needs to diminish in the short term(1-2 years), we believe the intermediate term (2-4 years) will tell a very different story. In a Gensler research study, they polled 2300 US office workers and the study indicated that 70% want to work in the office for a majority of the week. In fact, the study results said that most either wanted no days at home or only 1 or 2 days at home. People simply desire a sense of community. But there will be changes. Workers will expect less density- the open office concept could finally be dead. This obviously means that the square foot per person will increase. We expect this will counteract the increased remote working and be a "wash" in space needs. Office construction will return within the 2 years at pre-COVID levels.

Our Big Questions: As office construction returns, where will it be built? Will there be less in the city centers and more in the suburbs or "Urban Light" environments as workers demand less dense environments closer to their homes? Could this be a new age of sprawl? Will this mean less high rise construction?

Our Outlook: N *Neutral*

Tenant Improvements/Adaptive Re-Use

What We Know: Office workers will not return to packed-in open spaces with bench seating or cubicle farms. Those days are over. This will create an extensive demand for total space overhauls on a mass scale. Every corporate space planner in the country is rethinking their layouts. It will be a frenzy of opportunity in the construction world.

What We Think We Know: In the short term, as some companies recalculate their space needs, we may see scenarios whereby a company that once needed 75,000 sf, now only need 50,000 sf. As their lease comes up for renewal, they will shop the market for less space and get new tenant improvement allowances in the process. This behavior created considerable churn in construction work in The Great Recession and we anticipate this scenario repeating as we come out of the The Great Shutdown. We also anticipate there will be more need for conference rooms as workers collaborate on their in-office days. All of this says a boom in the tenant improvement world.

Our Big Questions: How quickly will people return to the office? Must we have a vaccine for this to happen? As for Adaptive Re-use, think about every mall in the country-a majority will not survive as retail. Will they be re-tooled as storage units, multi-family, warehousing? Smart money will figure it out so stay close to mall owners.

Our Outlook: G *GO!+++*

Storefront Retail

What We Know: Storefront retail was already in big trouble prior to COVID as more consumers bought online. COVID forced many of us online hold outs to learn to be super user, online consumers. The result- we like it and we are never getting back in a car to buy a pair of socks ever again. This pandemic has put the last nail in the coffin of storefront retail. Of course, there will be survivors and there will be some new construction, but never like before. Restaurants are the only thing that will return in full and that will take a total "reopening" of the economy to get momentum.

What We Think We Know: Grocery stores should continue to grow as rooftops grow, as its an essential business in any circumstance. But as always, grocery store construction is highly commoditized.

Our Big Questions: None. This sector is a loser.

Our Outlook: C *Caution!*

Warehouse/Distribution

What We Know: On line consumer buying will continue to increase demand for large warehouses and distribution close to consumers. This will grow everywhere but particularly in the areas where population will grow.

What We Think We Know: While there will be increased demand for warehouse, it will be highly commoditized. You will have to self perform concrete or site work to be competitive. The exception- refrigerated warehousing is more complicated and with increased demand for online grocery purchases with home delivery, refrigerated warehouses will see an increase in construction.

Our Big Questions: With regional malls dying and a need for distribution near rooftops, will these 2 factors collide to create Amazon distribution hubs at your local mall site? Makes sense to us.

Our Outlook: G *GO!* (But only if you can be competitive)

Life Sciences

What we know- In the life science hubs, there is significant project activity. In fact, there was never a slowdown. As COVID ramped up, grants from the National Institutes of Health flowed into the sector to promote research into vaccines, testing and therapeutics. We expect growth in this sector to continue.

What We Think We Know: Anecdotally, from speaking with research scientists and those in the pharmaceutical industries, it is anticipated that both public dollars and private dollars will continue to flow into the life sciences arena post COVID. There will be extreme interest in predicting the next pandemic and to create new treatments. This will fuel construction opportunities within this sector, mainly in the life science hubs of Boston, San Francisco, San Diego, Maryland, Raleigh-Durham and Philadelphia to name a few areas. See the top 10 hubs from a JLL report below. Note that almost all of the hubs are also in regions that out migration is expected, with exception to Raleigh-Durham and suburban Maryland, so these two will be hot spots even more than the others.

JLL Life Science Markets Rankings	
Boston	Suburban Maryland/DC
San Francisco	Seattle
San Diego	New Jersey
Raleigh-Durham	Los Angeles
Philadelphia	Westchester County, NY

Our Outlook: G *GO!*

Healthcare

What We Know: There has been accelerated development for acute treatment facilities in the wake of COVID. But overall people have steered clear of hospitals and physicians' offices in general. Revenues have been hit hard in this industry. These short-term revenue pinches will stifle short-term construction spending. But people don't stop getting sick or aging, thus the healthcare industry will snap back quickly.

What We Think We Know: 2021 might be quite a busy year for healthcare providers as procrastinated health concerns and delayed checkups may result in substantial health needs in the near future. One alarming prediction is that more people will die of cancer in 2021 than in any previous year, as early screenings have not taken place abundantly in 2020. Long term – revenues will increase from delayed procedures and surgeries leading to a return of stable growth in construction.

Our Big Questions: Will remote examinations stay with us post COVID? We don't think so.

Our Outlook: G *GO!*

Entertainment

What We Know: No one has been to a concert, ballgame, or movie in quite a while. These areas will probably be one of the last to comeback as it represents a vulnerable grouping of large numbers of people in small areas.

What We Think We Know: Even after a vaccine and after people return to schools and offices, these areas may the last to return as most people will feel uncomfortable. We expect these sectors of construction to struggle for quite a while.

Our Big Questions: How long will it take for people to feel comfortable being elbow to elbow with hundreds or thousands of people for hours at a time? Its going to be a long road back.

Our Outlook: C *Caution*

Industrial

What We Know: Prior to COVID, industrial was a retracting sector offset by some larger more complex manufacturing projects in the Midwest and West. COVID impacts have owners weighing options of returning some industrial production to the US as means to mitigate risk and control supply chains.

What We Think We Know: Some critical supply chain and national security items could be on-shored as COVID has exposed our nation to our vulnerabilities in acquiring essential items in a timely manner. It has also exposed areas that could become scarce in the event of a geopolitical crisis. We expect some on-shoring to take place.

Our Big Questions: On-shoring takes time as companies can not retool or demobilize quickly. The question is how long will it take for on-shoring to gain steam? And will the steam "cool off" with a COVID vaccine or as the crisis gets farther in the rear view mirror? While we may see some on-shoring in the intermediate term, most industry experts do not see long-term sustainability and growth in the US industrial construction markets.

Our Outlook: N *Neutral*

Senior Living

What we know- we all know America is becoming an older society as Baby Boomers continue moving into retirement. And the commonly accepted wisdom is this will continue to create demand for more senior housing.

What we think we know- we think a vast majority of the growth in senior living will follow the migration patterns as seniors follow their younger family members.

Our Big Questions: Will people resist senior housing as a result of the high COVID infection and death rates in senior living facilities? We think this could drastically change the short term demand for senior housing beds as seniors opt to stay in the home longer or move in with family members. And will senior facilities be forced to renovate to create less dense environments?

Our Outlook: N *Neutral*

CHANGES IN HOW COMMERCIAL CONSTRUCTION BUSINESS IS DONE

Beyond where our revenue dollars will come from going forward, there will be fundamental differences in how we do business:

Safety Protocols. We will not go into this subject in depth as it's a subject that has been exhaustively discussed. Needless to say, on-site temperature monitoring, masking, quarantining and distancing will continue to be a big part of our on-site and in office management responsibilities for the next 12 months or longer, depending on variables such as spikes, vaccines and infection rates.

Elimination of inefficiencies. Our industry has learned that we can get a lot more done with less. Less commute time, less airplane trips and less hotel stays. We have eliminated sending numerous people to countless, expensive conferences or training sessions. And we haven't really missed any of this. All of this adds up to overhead and time savings. Long after COVID is a distant memory, these time drains and expenses may never come back to the levels they were before. Expect more online, e-learning in combination with video-conferencing to fulfill our training needs. And expect more 50/50 "work from home/work in office" splits. Our industry, like many others, has learned that there are bottom line efficiencies to seize permanently. COVID or no COVID, much of these practices will be permanent. It's a money thing!

Prevailing trends are accelerated. Before COVID was in our vocabulary, there were several trends in our industry that had light momentum. We believe the COVID pandemic will accelerate several of these.

The first trend is prefabrication and modular construction. This subject has been talked about, explored and executed to a limited degree for years. We think it's about to leap forward rapidly. On-site construction faces many challenges. As a recent McKinsey & Company white paper stated, *"Extensive use of contractors and temporary staff and the project-based approach to building, create high volatility in activity from day to day. Materials and components can arrive at sites late and companies must manage restrictions on activities that can be performed only during certain hours of the day. Rather than solving these underlying issues, construction firms rely on temporary staff and subcontractors—which hampers productivity, limits economies of scale and reduces output quality and customer satisfaction."* Simply put, if you take scopes previously "site-built" and produce them in a controlled manufacturing environment, you can eliminate much of the challenges mentioned above. You are able to enhance schedule, control quality and minimize the pressure from labor shortages as more of the process becomes automated. Essentially, this transitions construction from a highly disjointed, labor heavy, project based approach, to a more automated product based approach.

As the McKinsey paper described, this makes construction more like automotive manufacturing and moves the industry away from the multitude of players involved at each step and the major interface frictions. And an added benefit to building in a plant, as opposed to on-site, it enables companies to control the spread of infection, should this be an issue again. For these reasons, we expect big investments to be made in prefabrication in the next 5-10 years.

The next trend is self performance. As the McKinsey report stated, historically *"Construction has been performed by generalists on-site in hostile environments, with a large part of the workforce being temporary."*

And while there was already a trend towards verticalization of the industry in the pre-COVID world, this verticalization of our industry will accelerate greatly over the next 5-10 years. We will see large construction managers buy trade contractors or start trade operations organically. We may even see large trade contractors move to become construction managers to protect their positions. This verticalization allows for more construction manager control of schedule, quality and labor. And, it enhances profitability greatly. One of the largest construction management firms in the country has been very vocal of their intent to verticalize. They certainly have the resources to pull it off and if they do the industry will be changed forever. The big question is—will their verticalized approach become the prevailing delivery model on larger, more complex projects over time? We think the answer is "yes," and while it may have little impact on smaller general contractors performing smaller, simpler projects, this trend may put significant pressure on regional firms late to the game, or who are unable or unwilling to make such investments.

Industry consolidation will heat up. As the trends of prefabrication and verticalization gain momentum within our industry, we will see a consolidation of our industry as regional firms unable to keep up with these trends are absorbed or close their doors and major subcontractors will be acquired by large CMs. As the McKinsey report stated *"Looking ahead, up to 45 percent of incumbent value may be at stake in those parts of the market most heavily affected by these shifts."*

In conclusion, we believe there will be major investments in prefabrication and verticalization in the next 5-10 years. This will result in less being built on-site and more being built in conditioned production environments on the larger, more complex projects. We will see commercial construction's dependence on scarce labor diminish as it becomes more automated and manufacturing based. And we will see consolidation, as it will take more capital investment to compete in this fashion. There will always be a place for the smaller general contractors, but the medium-sized regional firms will feel pressure if they do not adapt. This will happen gradually, but its coming. By 2035, the construction landscape will look very different than today.

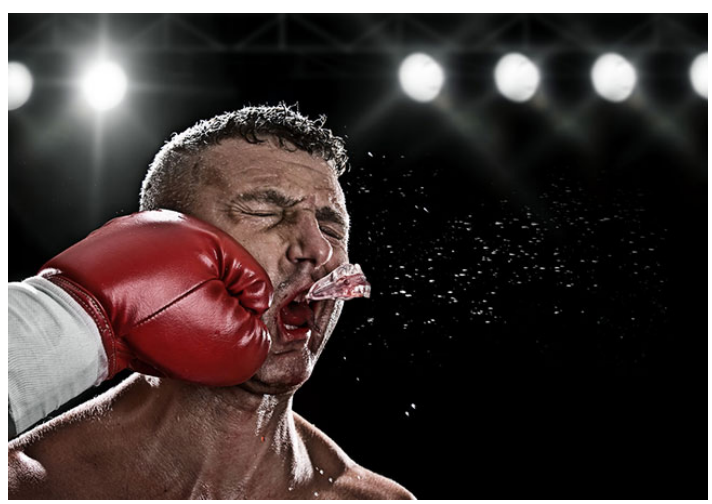
OUR FINAL THOUGHTS ON "THE NEW NORMAL"

For most of us, the events of September 11th, 2001 will forever be etched in our memories. We thought we'd never fly on airplanes again, or go to a concert, or attend a big sporting event. But we eventually did all of those things and ultimately more than before. I remember the first time I attended a college basketball game post 9/11. We were all greeted at the gate with security and metal detectors. And then I flew for the first time post 9/11 and there was the TSA. Both were very surreal experiences at first, but we quickly became accustomed. I can't even imagine going to the airport without TSA now. My point—the "new normal" post 9/11 eventually looked a lot like the "old normal," with a few remnants like the TSA.

We believe the "new normal" post COVID will eventually look a lot like the "old normal" as well, but with a few remnants. We will go to games again, we'll stay in hotels, we'll travel and kids will be back on campuses. The remnants will be there and we can only speculate what they'll be... Maybe college kids demanding more online classes to save money? Employees working more from home? Or the death of the handshake? I can live with all of those!

Honestly, we think the biggest remnants are not going to be health related at all, but rather the things that were revealed or accelerated as a result of the pandemic—less stigma to online college, the death of cubicle farms, the acceleration of online shopping, the efficiencies of business and the swing to a "product based" approach in our industry.

Years ago, when Mike Tyson was in his prime, he said everyone came to the ring with a plan on how to beat him. His famous line, *"Everyone has a plan until they get punched in the face!"* Our economy and our industry have been punched in the face. The "old normal" will return but it will take a few years and there will be remnants that could really shake things up if you are not prepared. The final point in this research piece- whatever your strategy plan was prior to this pandemic, re-think it. Things have changed.



ABOUT THE AUTHOR

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