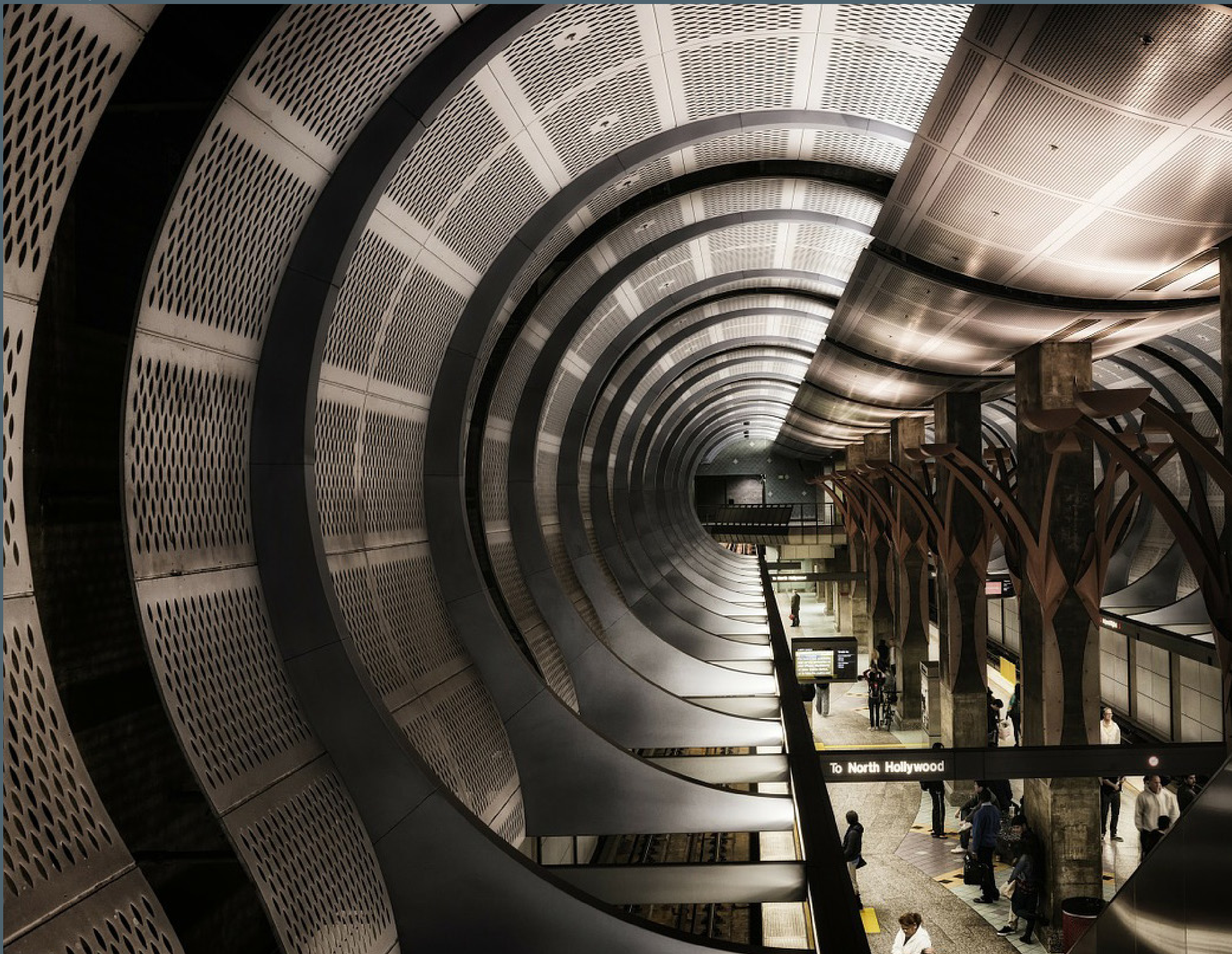
DHARAM
CONSULTING

2021 - 2023 MARKET OUTLOOK

US CONSTRUCTION

January 2021



From the devastating Covid-19 pandemic, to economic shut downs and rebounds, to a contested US election, 2020 has been a year for the history books.

In this report, we review the impact of the 2020 events on the US construction industry and assess the outlook for project pipelines, supply chain capacity and input cost trends, in order to provide Dharam Consulting's view on the outlook for construction costs and contractor bid submission pricing.

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DHARAM CONSULTING
VIEW

The US economy has been recovering strongly through the summer, but a surge in Covid-19 cases since autumn led to the renewed introduction of local restrictions, dampening any premature expectations of a swift V-shaped recovery. Construction has mostly been allowed to continue during these second wave lockdowns, but restrictions on travel and seasonal limits to work on site mean that it will be harder for contractors to catch up or even maintain work. Coupled with the disruptions of the 2020 presidential election and likely changes in the direction of future policy of the new US administration, today, there is much more uncertainty about what lies ahead for the construction supply chain.

In our summer 2020 Industry report, we advocated a shallow V-shaped recovery. We broadly maintain our view for the construction industry as a whole, but recognize there will be regional differences, with some locations showing signs of a stronger return in demand, while others are lagging behind.

Our outlook for construction activity, pipeline work and bid submission prices is based on the following assumptions:

» Post-election reduction in political uncertainty, but the prospect of a divided government will make it difficult to enact substantial regulation, including a comprehensive infrastructure investment bill.

» An agreement has been reached on a second $900-billion Pandemic Relief Bill, which will provide confidence in business continuity.

» Projects put on hold during the lockdown, ramped up quickly to complete as soon as possible, but many projects that were meant to commence in summer/ fall 2020 were postponed to 2021.

» Weak construction starts in 2020 have reduced contractor backlog. Construction on site is expected to remain relatively subdued during the first half of 2021.

» The start of the vaccine rollout is encouraging, pointing the way toward a more robust economic recovery over the course of 2021, allowing the release of pent-up demand for capital projects and increasing the risk appetite of developers and project owners.

» Labor capacity constraints have eased. Industry capacity can be mostly retained on expectations of a broader industry recovery in 2021.

» Social distancing measures will continue to impact productivity among CM's, subcontractors, project managers and other players in the construction supply chain.

» Building materials are seeing increased prices and longer lead times in many parts of the country, especially for lumber products, steel and MEP materials.

» Bid submission price inflation has slowed and, in some places, declined in 2020, as higher material prices were offset by lower profit margins and fairly stable labor cost.

» A strong rebound in pre-construction planning + design work is expected to result in increased project starts in 18-24 months, so that contractors' order books start filling in 2022, the start of a new construction cycle.

» We can imagine a scenario where clients are keen to profit from more stable prices near term, with a large number of projects being called for tender in the latter half of 2021 for an early 2022 start on site. This could put renewed inflationary pressure on the market already in late 2021, earlier than currently considered in our baseline scenario. In this case a sudden spike in demand for trade resources would cause a jump in cost escalation.

» Bid price variability is expected to be high among contractors and sectors over the next 12-24 months, depending on the exposure and resilience to the current crisis.

Summary

LOCATION BID SUBMISSION PRICE FORCAST

Average Bid Submission Price Escalation, in Percentage (Range in Brackets)				
Location	2020e	2021f	2022f	2023f
Boston	1.0 (0.5 - 1.5)	2.0 (1.0 - 3.0)	4.0 (2.5 - 7.0)	3.0 (1.0 - 6.0)
New York	2.0 (1.5 - 2.5)	2.0 (1.0 - 3.0)	2.5 (1.0 - 4.0)	3.0 (1.5 - 5.0)
Philadelphia	0.0 (-0.5 - 0.5)	0.5 (-0.5 - 1.5)	3.0 (1.5 - 6.0)	3.0 (1.5 - 5.0)
Washington D.C.	2.0 (1.5 - 2.5)	1.0 (0.0 - 2.0)	3.0 (1.5 - 4.5)	3.0 (1.5 - 5.0)
Chicago	0.0 (-0.5 - 0.5)	1.0 (0.0 - 2.0)	2.0 (0.5 - 3.5)	3.0 (1.5 - 5.0)
San Francisco	4.5 (4.0 - 5.0)	2.5 (1.5 - 3.5)	4.0 (2.5 - 5.5)	4.0 (2.0 - 6.0)
Miami I Tampa	3.0 (2.5 - 3.5)	3.0 (2.0 - 4.0)	3.0 (1.5 - 4.5	2.5 (0.5 - 4.5)
Seattle	4.5 (4.0 - 5.0)	3.0 (2.0 - 4.0)	2.5 (1.0 - 4.0)	2.5 (0.5 - 4.5)
Cleveland	4.0 (3.5 - 4.5)	4.0 (3.0 - 5.0)	2.5 (1.0 - 4.0)	2.5 (0.5 - 4.5)

US ECONOMIC
BACKDROP

The Covid-19 pandemic caught the world economy off guard in spring 2020, causing unprecedented damage to global labor markets and supply chains. Over the course of the year, the pandemic and its impact on the economy dragged on, proving more devastating than many had expected in March.

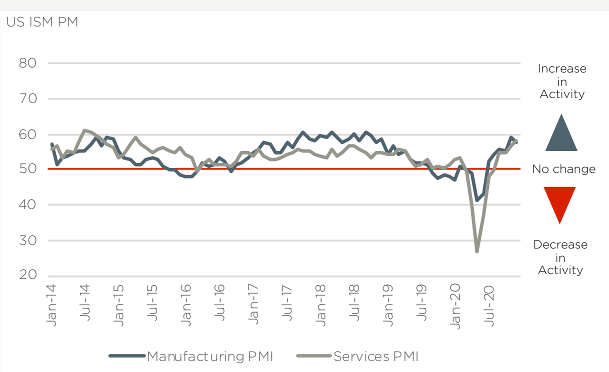
In the US, rigorous public-health responses, with wide-ranging restrictions on passenger transportation, labor mobility, factory, shop, leisure and office closures, pushed economic activity to unimaginable lows, impacting households, businesses and supply chains across the board.

"Stay-at-home" orders issued in March and April were (partially) lifted over the course of May/June which, coupled with government pandemic assistance payments for households and businesses, helped stabilize economic activity from their historic contractions. By the third quarter of 2020, the sharp downturn appeared to have bottomed out, with some economic indicators, such as the manufacturing and non-manufacturing (services) sector activity indices moving into positive territory (chart 1). In many sectors, including investments in residential building, the rebound in the third quarter generally surprised on the upside. A notable, but generally expected exception was the further weakening in investments in non-residential structures (chart 2).

Hopes of a V-shaped recovery were dashed in the final quarter of the year, as a resurgence of Covid-19 in the country (and other regions globally), triggered the re-introduction of lockdowns in various forms, causing a renewed slowing in many sectors. Yet at the end of 2020, large parts of the economy are not doing as badly as initially feared. A systematic meltdown, stoked by the intensity of the initial shock, did not materialize and the cumulative contractions in 2020 do not seem excessive by historical standards. In addition, there are widespread expectations that the current contractions due to the renewed local lockdowns are significantly smaller than earlier in the year.

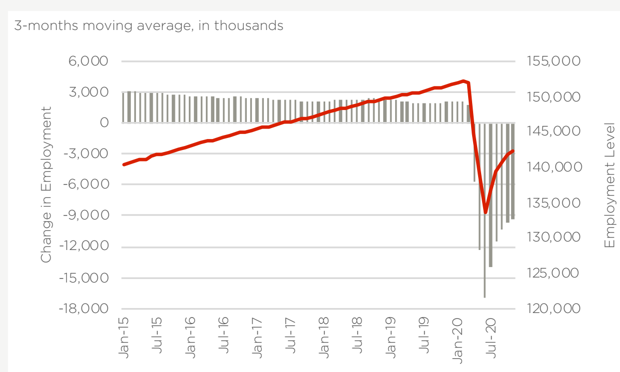
Labor markets were impacted dramatically (chart 3). The unemployment rate surged to a near 40-year high of 14.7% in April and levels had been expected to stay at high well into 2021. Regular claims for unemployment insurance shot up to historic heights. The Coronavirus Aid, Relief, and Economic Security (CARES) Act, signed into law March 27, 2020, created two new programs for unemployment compensation in response to the coronavirus pandemic – the Pandemic Unemployment Assistance (PUA) and Pandemic Emergency Unemployment Compensation (PEUC). Both of which provide much needed relief to households and have helped the housing market to remain resilient throughout the year (chart 4).

CHART 1: BUSINESS ACTIVITY TRENDS



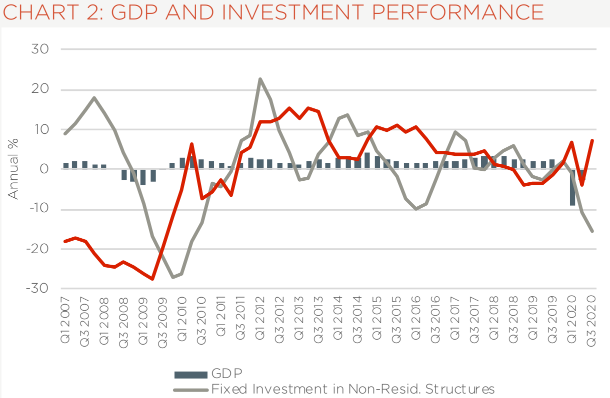
Source: ISM

CHART 3: US EMPLOYMENT



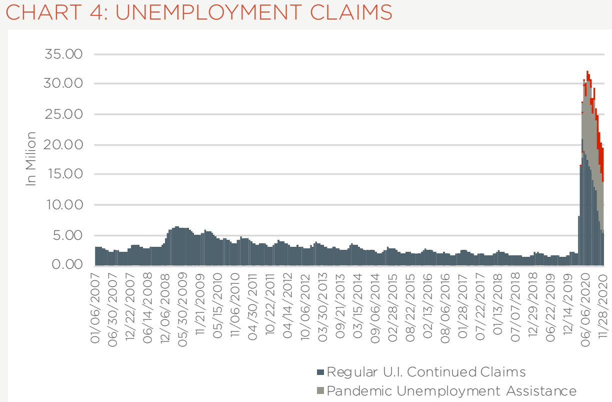
Source: BLS

CHART 2: GDP AND INVESTMENT PERFORMANCE



Source: BEA

CHART 4: UNEMPLOYMENT CLAIMS



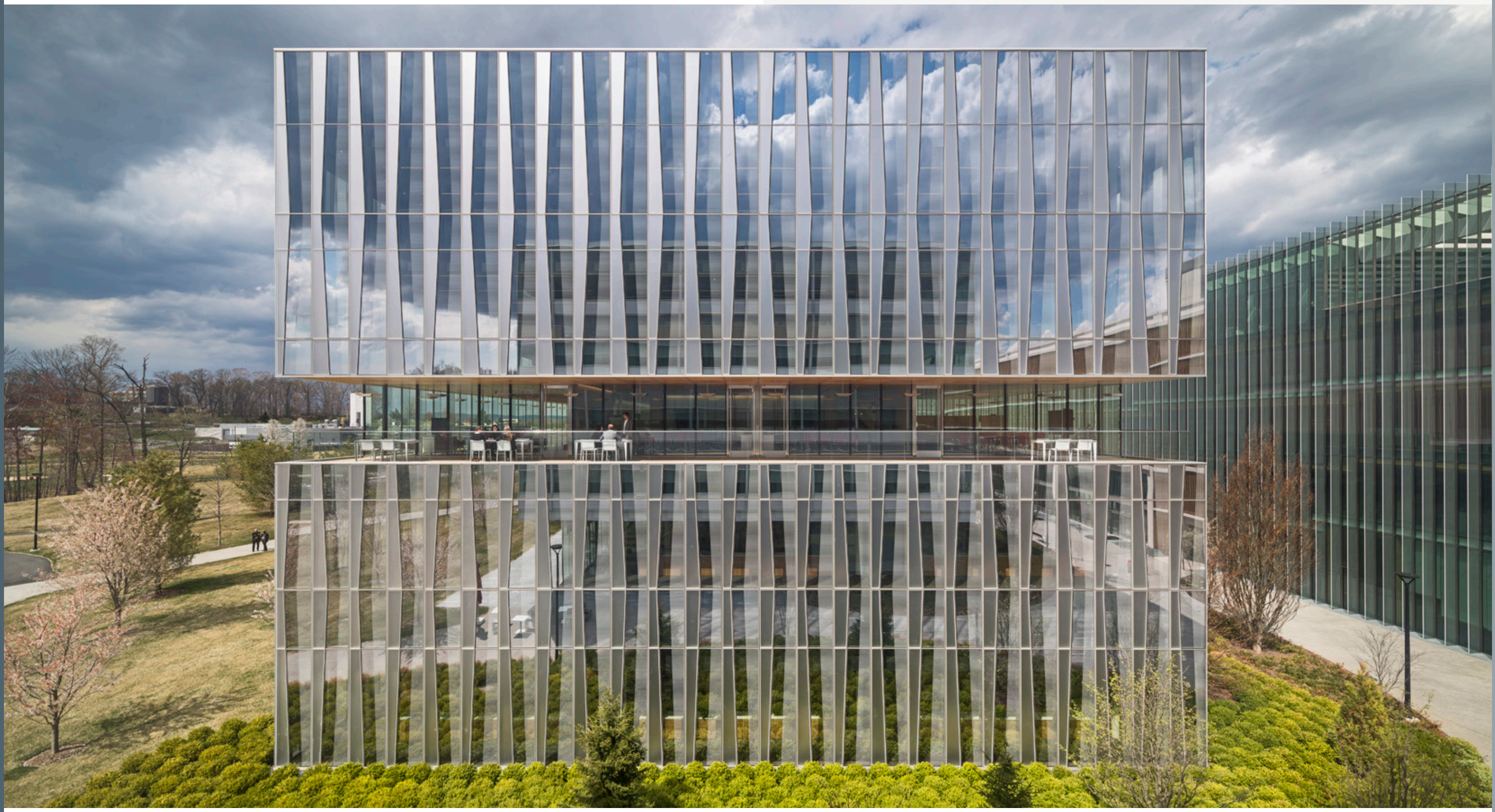
Source: DOL

Unemployment in the second half of 2020 fell much sooner and faster than thought to 6.7% in November, which is still high, but much lower than initially feared. Whilst this is a positive trend, the regular unemployment claimant and pandemic relief payment figures remain at a very high level even at the end of 2020.

There are significant regional differences in the jobs market, with urban centers generally faring worse than rural areas, in particular those depending on services, hospitality and tourism industries. Among the cities covered in this report, Detroit and New York set the negative records, both in terms of the surge in job losses and the lagging recovery. In contrast, Denver and Houston saw the lowest accumulated job losses. Washington D.C., with its government-driven jobs markets fared also relatively better than many other locations (chart 5).

CHART 5: REGIONAL EMPLOYMENT TRENDS

Source: BLS



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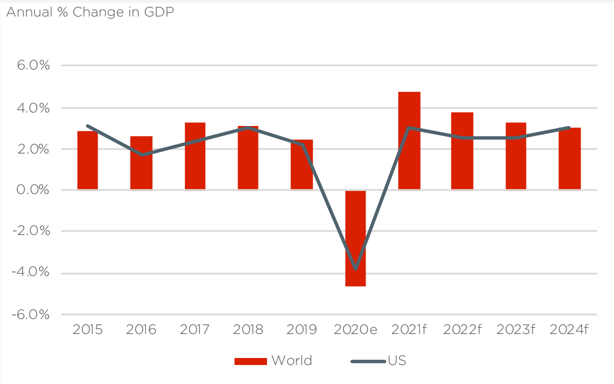
Outlook

Unsurprisingly, going into 2021, forecasters have been cautious about their predictions with regards to the shape and timing of a recovery. The majority of economic commentators now expect a more prolonged period of subdued activity rather than a swift V-shaped recovery. The recovery scenario remains exceptionally uncertain and the outlook will largely depend on the evolution of the pandemic over the winter months, the availability of effective vaccines to the broad population and another round of fiscal stimulus.

IHS for example now expects the US economy to expand by 3% in 2021, after a 3.8% contraction in 2020, meaning that it will take more than 18 months for the economy to return to pre-crisis levels. The current recovery scenario rests on several assumptions, including:

CHART 6: ECONOMIC FORECAST



Source: IMF, IHS

- » The impact of second wave local lockdowns will be less severe than the first wave with manufacturing and construction sectors continuing to operate.
- » News of fast-tracked approvals of vaccines and the start of mass-inoculations are encouraging, though a widespread roll-out is unlikely before mid-2021, which will allow a sustained growth trajectory to take hold as consumer and business confidence returns.
- » External demand, driven by China, will be supportive as the country avoids a second wave of lockdowns and activity recovers firmly.
- » Despite the trade war and imposition of import tariffs, US imports from China during in the second half of 2020 have been higher than in years. As a sign of stronger global trade demand, container freight rates have surged in 2020, with freight forwarders reporting capacity constraints on the most important trade routes between Asia, Europe and North America, which has led to a lengthening in lead times for imported consumer goods, as well as building materials.
- » The fiscal policy response has been effective in partially offsetting economic damages, preventing widespread household and company bankruptcies, as well as a financial crisis, while giving a silver lining to the post-pandemic recovery. Another $900bn relief package has been approved on Dec 20th, which includes payments to individuals and PPP loans (Paycheck Protection Program) for small businesses, cushioning the blow from another round of local lockdowns.

Whilst a return to economic growth is the main scenario, a number of risks linger and more negative scenarios can also be conceived. A key risk is that the increased social interaction during the traditional festive season will accelerate infections, requiring a renewed tightening of restrictions in Q1 2021.

A broader political failure, related to a divided government, is also on the list of risks. A failure to agree on an additional fiscal stimulus could mean that the recent surge in Covid-19 infections and the re-imposition of measures to contain the virus by some states and localities will result in more widescale bankruptcies, prolonged unemployment, and in a worst case scenario financial crisis, undermining any economic recovery in early 2021.

The impact of the pandemic will play out over the longer term, most notably as changing travel preferences and work practices are already causing a shift in office workspace demand, as well as reallocation of capital investments and labor.

On the upside, effective vaccines becoming increasingly available to protect the most vulnerable members of the public, with wider distribution to proceed over the first half of 2021, could release pent-up demand faster and stronger than currently expected, leading to a surge in consumer and capital spending in the second half of 2021.

Whilst the U.S. economy appears in a tentative recovery mode after the unprecedented collapse in Spring 2020, a smooth progression to sustained recovery has been waylaid by a not unexpected winter resurge in Covid-19 infections, with renewed local lockdowns aimed at preventing a collapse of the health care system.

We are cautiously optimistic that the availability of effective vaccines to the broad population and an additional fiscal aid package will provide the fundamentals to start a new business cycle over the course of 2021, where pent-up demand for capital investments provides confidence to the construction industry to proceed with deferred and new projects.

CONSTRUCTION MARKET

INDICATORS

In 2020, construction has been subjected to multiple extremes. Projects started in 2019 allowed activity to be solid at the start of the year and there was a steady pipeline of projects in the design and permitting phases. A shortage of skilled labor, coupled with escalating construction costs and political uncertainty in the election year appeared to be the main risks dampening developer appetite. The pandemic caused sites to shut down forcing a stop on many projects on sites, while nervous clients put projects in the design stages on hold. Activity in freefall in May/June 2020 was followed by an (in places sharp) increase in September and October. Local second wave lockdowns have so far had a much more benign impact on the construction industry, with activity generally allowed to proceed.

The assumption that inoculations in 2021 will beat back the coronavirus, make the return of pent-up demand in key sectors of the industry tantalizingly closer. However, any pace of recovery we foresee in 2021 will not be equal, with the promise of acceleration of public investment and the potential delays in private sector workload.

State of Play

Whilst projects had (and have) to abide by social distancing and other health procedures, construction has been deemed essential infrastructure in most locations in the US throughout the year. As such, large parts of the US industry were exempt from stay-at-home orders. Nevertheless, the pandemic put a significant brake on industry activity, with many projects halted at least for a period of time at the height of the first lockdown in Spring 2020. At the same time, the uncertainty in the market led to a dramatic fall in the number of construction project starts in the first half of 2020.

The early autumn months brought a substantial recovery and renewed optimism, with activity resuming on site and the release of pent-up demand allowing architects and designers to proceed or start with project designs. Expectations of an early recovery in 2021 may be premature, however, and we remain cautious about whether all new projects make it off the drawing board as planned. New investments in many sectors are still under review as clients re-assess their portfolios and funding conditions so that the outlook for new orders remains uncertain.

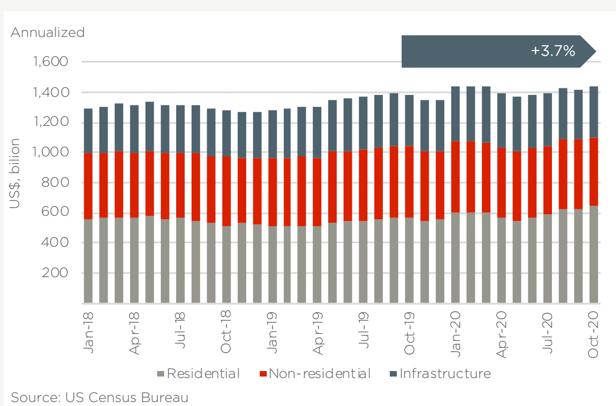
Somewhat surprisingly, the official US construction spending figures show that the value of construction totaled an annualized $1,439bn in October 2020, which is 3.7% higher than in the preceding year. Even discounting construction inflation, this is certainly not the dramatic declines reported elsewhere (chart 7).

Partially, this has been due to firm project starts in 2019 feeding into work on site. Project starts, in particular the increased number of megaprojects in 2019, have supported the official put-in-place construction spending figures this year. Specifically, energy, highways and roads projects supported the overall level of construction work during the first half of 2020, when many non-residential projects suffered a setback.

In addition, renovation, repair and maintenance work accounts for between 40-50% of construction spending and many projects are medium and smaller sized. This type of work across sectors such as residential, hospitality and leisure, and commercial (parts of which have had to implement internal structural changes to meet new H&S requirements) has buoyed industry activity this year. Residential construction also increased considerably in 2020, especially repair and maintenance work. The increase in the value of residential construction spending has been across the board – private single-family, private multi-family and public housing (chart 7).

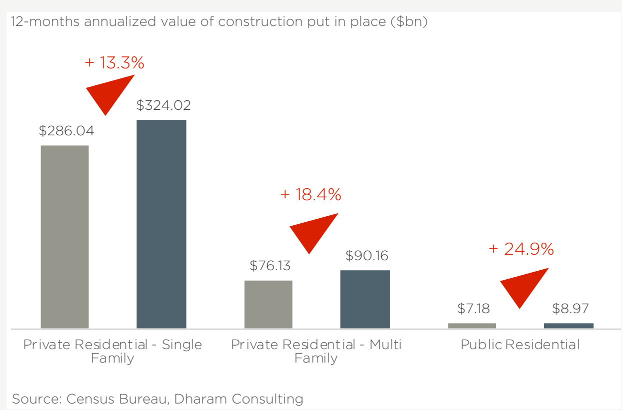
In contrast, non-residential construction declined by 5.5% year-on-year, with new work harder hit than repair and maintenance.

CHART 7: US CONSTRUCTION SPENDING



Source: US Census Bureau

CHART 8: US RESIDENTIAL CONSTRUCTION SPENDING



Source: Census Bureau, Dharam Consulting

Taking into account construction inflation, which had still been relatively high in many locations at the start of 2020, the fall in volumes has probably been nearer 10% on average. Unsurprisingly, hospitality and recreation related work suffered most this year, with the value of construction put-in-place down by 17% year-on-year in October 2020. Commercial work fell by 12% over the same period, while education related work also saw a significant decrease, mainly due to higher education institutions putting a hold on their capital programs. Private healthcare work stagnated at best in value terms, indicating that the volume of work on site fell back modestly. Public healthcare projects increased over the course of 2020 (charts, 9,10).

Other estimates of industry activity for this year paint a much gloomier picture than the headline construction put-in-place. For example, Cummins report that overall construction spending fell by more than 11% this year, showing significant drops in construction volumes across all sectors.

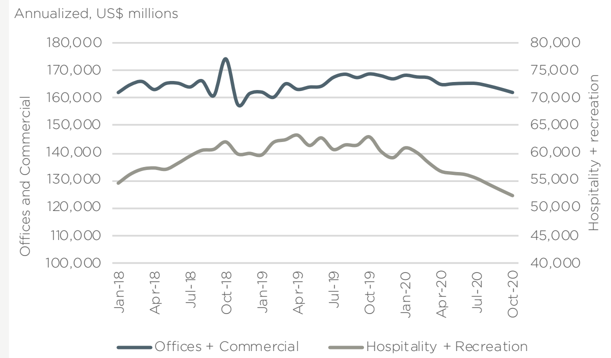
Nearly all of the respondents to our end of year construction market survey report that a proportion of their 2020 workload in terms of projects on site had been impacted by the Covid-19 pandemic. Within this, two-thirds report that up to 50% of projects were impacted, while the other third saw more than 50% of their projects put on hold, cancelled or scaled back. The picture was only somewhat better on the pre-construction side of the industry. 90% of our respondents revealed that their projects in design and planning had been negatively impacted, with nearly 60% reporting that up to 25% of their projects were affected by cancellation or delays. A third saw a much larger share of their projects affected (chart 11).

Reflecting these figures, the majority of respondents saw that their workload fell over the past 12 months, with three-quarters reporting a decline. A minority of 15% of our respondents saw an increase in their workload over the past year. In terms of the pace of decline, nearly half saw their workload decrease by over 5%, with some respondents reporting a drop of up to 20% in their workload. The fall-out from the Covid-19 pandemic is by far the main cause for the drop in industry workload in 2020. Clients and the construction supply chain report facing their own set of challenges, ranging from the validity of business cases to cash flow problems to having to make the difficult decision of losing skilled staff. Capital spending programs were put on hold, scaled back or cancelled as funds were diverted to cover pandemic response.

Our respondents also saw public agencies at the state and municipal level deal with extreme staff shortages forcing them to divert staff and delay projects while dealing with the health crisis. The 2020 presidential election added to the uncertainty in the market, creating additional hesitancy and reservations among private developers and lenders. The minority of our respondents who saw workload increase over the past year, cite a continuation of mission critical government projects at state and federal level as the main reason for their performance.

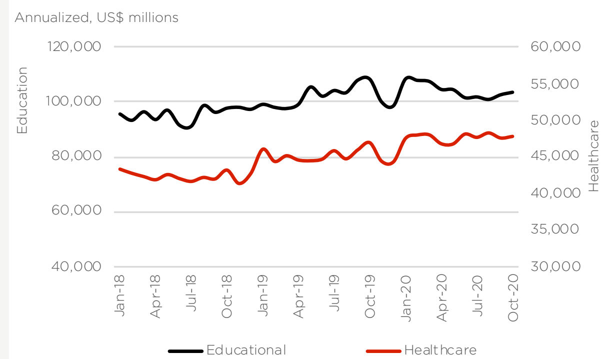
As clients and contractors put an abrupt stop to work on site and projects in design phases, construction employment was severely impacted across the board, with total employment in the sector dropping by nearly 14% between January and April 2020. Unemployment in the sector spiked at nearly 15% nationally in June before it began falling steadily back down (chart 13).

CHART 9: NON-RESIDENTIAL CONSTRUCTION



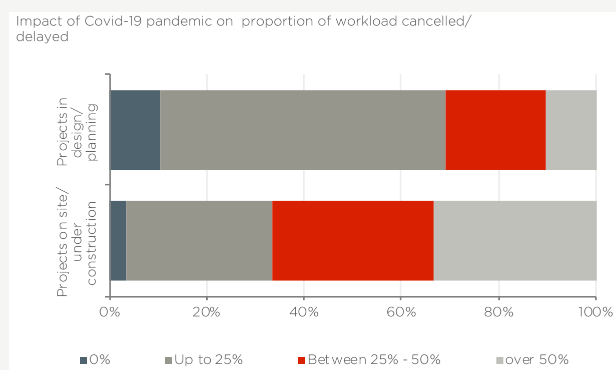
Source: US Census Bureau

CHART 10: EDUCATION + HEALTHCARE CONSTRUCTION



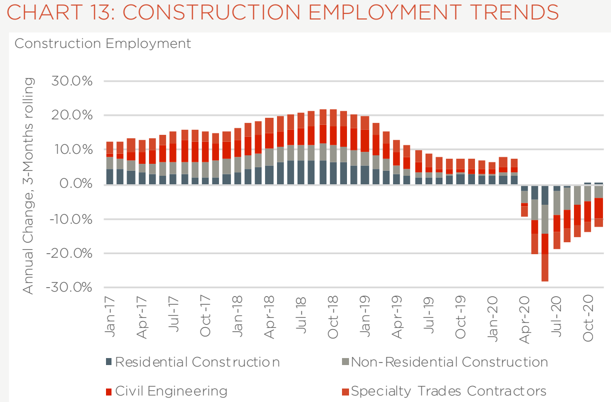
Source: US Census Bureau

CHART 11: IMPACT OF COVID-19 ON PROJECT WORKLOAD



Source: Q4 2020 Dharam Construction Survey

CHART 13: CONSTRUCTION EMPLOYMENT TRENDS



Source: BLS

Regionally, the picture diverged significantly, depending on the severity of lockdowns, state or city 'stay-at' home orders and whether construction was deemed essential business, allowing it to continue operating. Between January and April, Detroit, Seattle, New York and Boston set the negative records, seeing the most dramatic declines in industry employment (chart 13).

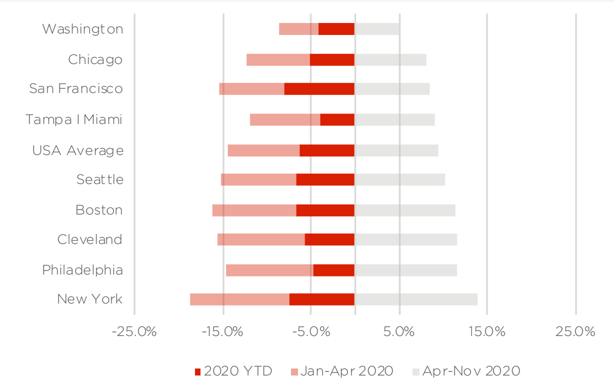
Encouragingly, since the summer 2020 conditions in the construction labor market improved across the board, with construction performing relatively better than the rest of the economy. As of November 2020, employment stood 3% down on levels seen in January.

The recovery in employment will take some time, though, and is unlikely to make significant progress until the pandemic is under control. In the meantime, social distancing and other new protocols to control the spread of Covid-19 will remain the new normal for the industry.

These measures have – for the majority of the supply chain – impacted on business operations increasing business cost and schedules (chart 14).

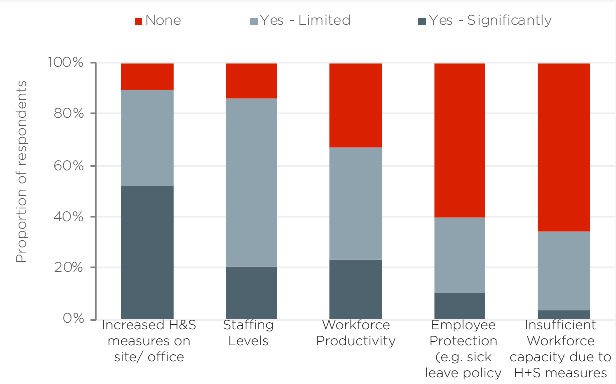
Indeed, our survey respondents indicate that Covid-19 impacted their company's operations by increasing H&S requirements on site and in the office environment. Our respondents diverge in their view with regards to the impact on productivity. Whilst two-thirds report that productivity has been negatively impacted due to changes in workplace requirements on site, building materials manufacturing and design office, the majority report a limited impact, as businesses managed to adapt fairly swiftly to new realities. A large minority of 33% report that they saw no impact on productivity and some even reported an increase.

CHART 14: REGIONAL EMPLOYMENT TRENDS



Source: BLS

CHART 15: IMPACT OF COVID-19 ON BUSINESS OPERATIONS



Source: Q4 2020 Dharam Construction Survey

Industry Expectations

Our industry survey and industry indicators point to a mixed bag of expectations about near-term industry prospects, with most expecting a jagged recovery in 2021. Our cautious optimism hinges on the winter Covid-19 surge being brought under control, the success of a mass inoculation, political willingness to push through another fiscal aid package, and the release of pent-up demand for construction investment. Only the combination of these factor will allow clients and developers the confidence to proceed with their projects, providing the supply-chain certainty in their workload prospects.

After a relatively firm start to 2020, architects saw a drop in new project activity (design contracts) and their billings over the course of 2020 (chart 16). We estimate that at the height of the first lockdown in March to May architectural billings decreased by 40% year-on-year. New design contracts underwent a similar trend. Competition among architects has reportedly increased significantly, with projects being chased by a higher number of firms seeking additional work in non-traditional market sectors and locations in order to protect their billings and retain staff.

Encouragingly, the pace of the decline started to slow in summer 2020. Design contracts started to tentatively move into positive territory in October, a trend that is consistent with our experience and one that we saw strengthening in the final quarters of this year. Whilst architectural billings are still subdued, we expect a recovery in the first quarter of 2021 on the back of an increase in new design contracts, with the positive trend strengthening over the course of next year.

Regionally, the Architectural Billings Index shows significant differences. Billings in the North East had already started to soften in 2019 and dropped sharply in Spring 2020. The pace of the decline has slowed, but billings remain significantly weaker than in other regions (chart 17). The Midwest and Southern regions on average saw similar declines in architectural billings in the first half of 2020, with a trend of recovery visible across both regions since late summer. Billings in the West also fell across the board, but to a lesser extent than seen elsewhere in the US. In addition, billings appear to have stabilized faster, with the latest index reading even a small increase.

Dodge estimates that total starts fell by 14% to $738 billion in 2020, impacting near-term construction spending and cash flows. Our survey respondents (developers) are citing concerns by their financing partners over the economic outlook and demand as the main reason for the pause in work to allow for an underlying review of project fundamentals. The value of construction starts is forecast to rise by of 4% to $771 billion in 2021. Residential starts are expected to rise by 5%, with single-residential outperforming the multi-residential market (-1%).

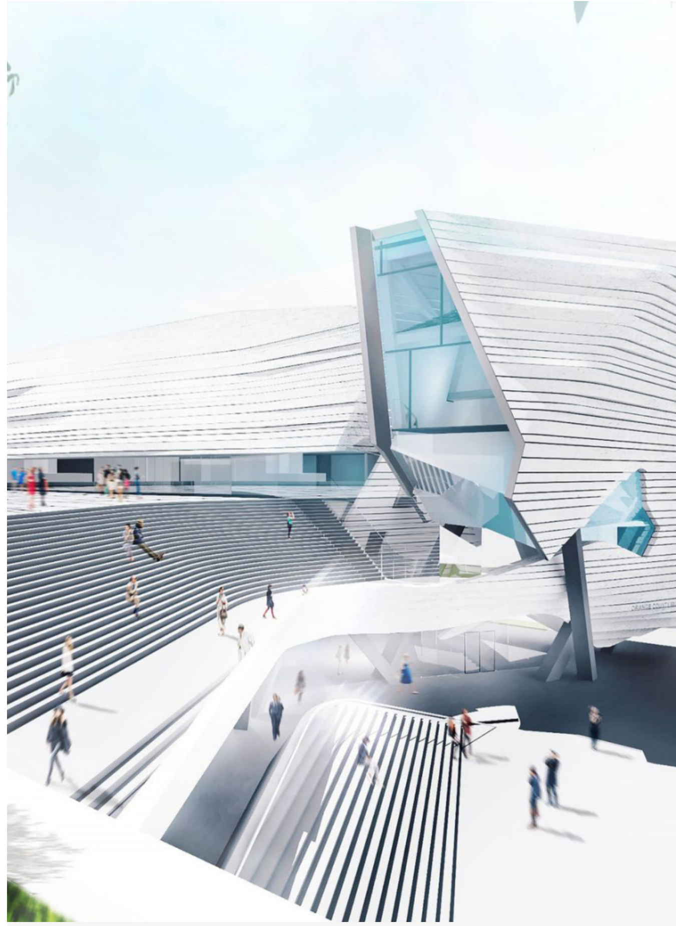
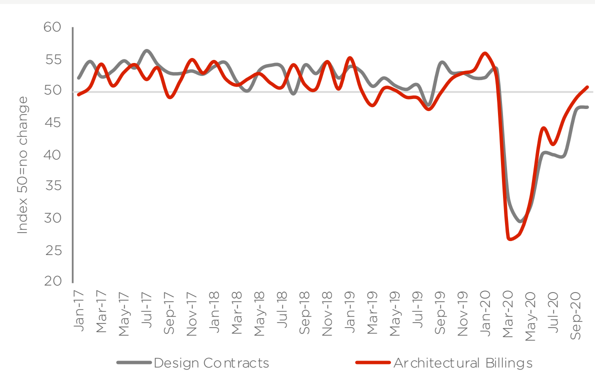


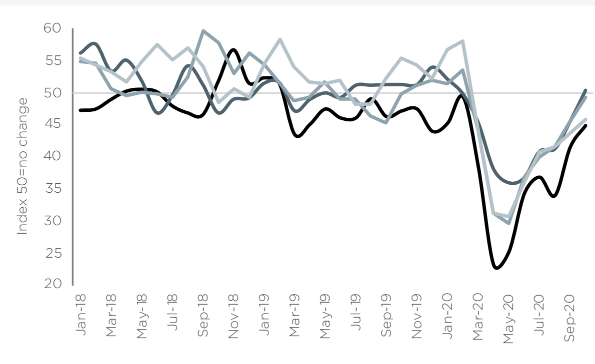
Photo: OCMA I Orange County, CA I Morphosis

CHART 16: ARCHITECTURAL BILLINGS INDEX



Source: ABI

CHART 17: REGIONAL ARCHITECTURAL BILLINGS



Source: ABI

The value of infrastructure starts is forecast to increase by 7%, while non-residential starts are expected to rise by a more modest 3%. A strengthening in healthcare and public starts is dampened by subdued activity in the hospitality, commercial and offices sectors, which will take longer to recover.

Our survey respondents are overall cautious, but attach a high degree of uncertainty regarding their workload expectations over the next 2 years (chart 18). 57% of our survey respondents expect an increase in workload over the next two years, with designers and architects more optimistic than contractors and sub-contractors. Within this, 30% expect an increase of up to 5%. A relatively large minority of 30% of survey respondents expects construction volumes to decrease over the next two years.

The majority of respondents believe that it will take clients and developers some time to assess the full financial consequences of the fall-out from 2020 and what it means for their investment portfolios, funding availability and cash-flows. However, we now have a clearer time horizon to the control of the pandemic (depending on the efficient widespread roll-out of an effective vaccine), which is fueling optimism in the sector.

Rising confidence over an economic recovery is expected to unleash pent-up demand, re-starting halted projects and starting new ones. Clients in some sectors, i.e. hospitality, leisure and commercial will remain hesitant for a while to spend money still but some developers in less impacted sectors, such as healthcare, life science, warehousing or data centers will be keen to take advantage of stable (in cases even lower) construction prices (chart 19).

After a brief hiatus, our survey respondents of higher education clients plan to proceed and even accelerate schedules to meet their capital program targets. In addition, new work opportunities from federal and state level governments are expected. Local and state government finances have struggled even before the pandemic, raising the question of how much these clients will be able to afford. At the same time, we have seen an increase in the amount of work, such as state schools, municipal buildings and public museums, much of which is deferred maintenance spending.

In contrast, those who expect a continuation of subdued market conditions, expect that the impacts of the pandemic will linger in the market. Project owners will take some time to ramp up funding and restart projects, reassessing their budgets and waiting for more definite signs of rebounding demand.

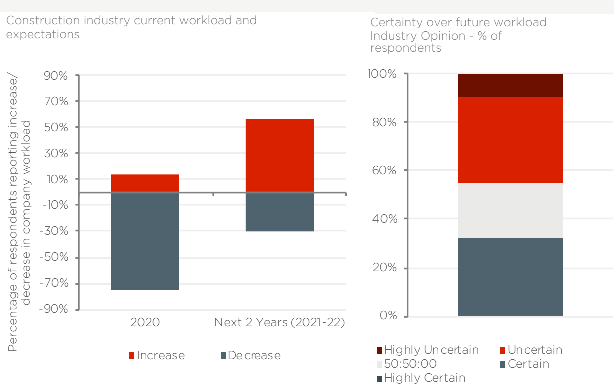
We have seen a significant increase in enquiries and RfPs coming onto the market in recent months, and are increasingly confident that new architectural design contracts and billings will rebound over the course of next year. We expect construction demand to return once the market begins to see a more defined horizon to the end of the pandemic, with clients pushing design work with a view to tender projects in the second half of 2021, seeking to benefit from the market adjustments reflected in contractor pricing in 2020.

Given the pipeline of projects in design phase that we have seen in recent months and expect to see next year, it is not an unlikely scenario that we will see a significant rise in project starts towards the end of 2021 and early 2022, which could lead to capacity constraints in the construction supply chain and a return of pressure on bid submission prices.

Whilst we expect starts to increase perhaps even significantly in 2021, we share the view that contractors will have to wait until 2022 to see a meaningful increase in workload and activity on site.

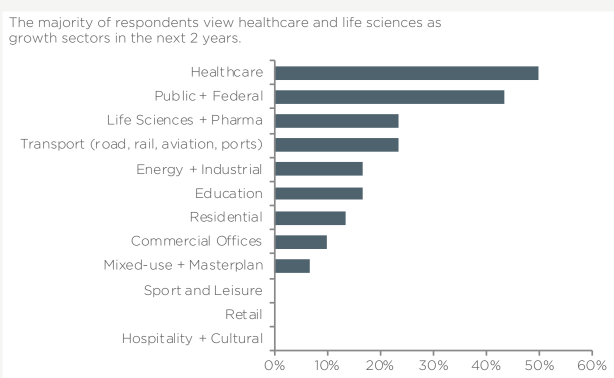
The main cited risks to growth are the wider economic performance and post-election changes in government spending plans. Whilst the new Biden Administration has articulated their vision for infrastructure investment priorities, the industry will be waiting for tangible spending plans and specific programs, in order to respond to potentially new requirements in sectors.

CHART 18: CONSTRUCTION INDUSTRY CURRENT WORKLOAD AND EXPECTATIONS



Source: Q4 2020 Dharam Construction Survey

CHART 19: KEY GROWTH SECTORS



Source: Q4 2020 Dharam Construction Survey

Biden infrastructure plan

Without a clear Congressional majority (the January runoff election in Georgia will be decisive), the new Biden Administration will not have much leeway to push through a large national infrastructure program, needed to address repair and maintenance backlogs, futureproof social and transportation infrastructure and achieve more ambitious sustainability goals.

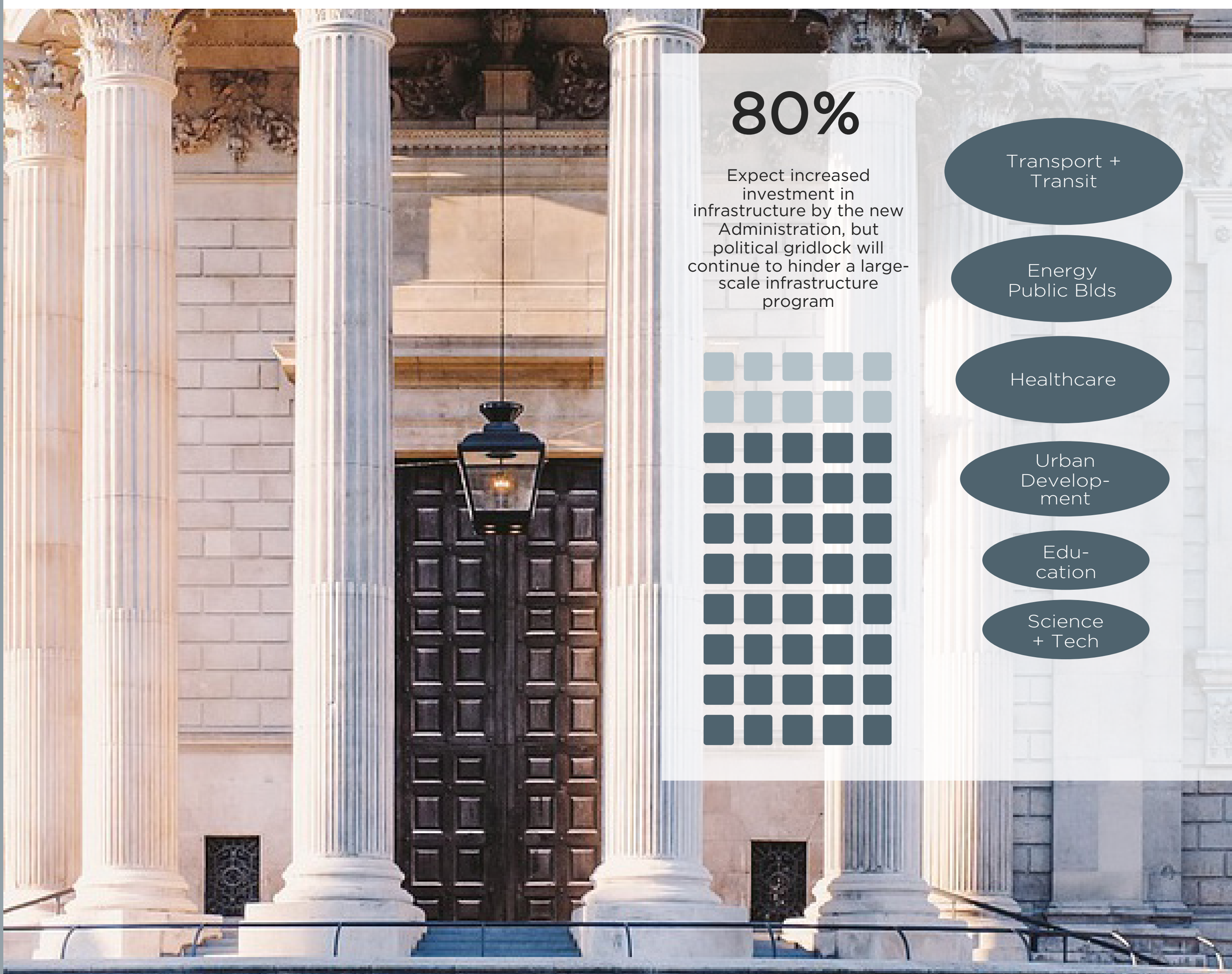
Indeed, whilst our survey respondents expect that major investments in infrastructure is likely to remain a long-desired but elusive goal for the industry. The majority of respondents expects the success to be limited and to materialize only over the next 2 to 3 years.

President-elect Joe Biden ran on a platform that featured infrastructure investment as a key pillar of job creation and economic recovery efforts. His $2 trillion cleantech and infrastructure plan looks at step changes in transportation, energy efficiency and smart grids, water and digital policies to improve the resilience of the US' physical assets. Key plans involve upgrading and retrofitting millions of public and commercial buildings to make them more energy efficient.

Plans also include transitioning energy infrastructure, decarbonizing the power sector by 2035 by investing in clean energy, carbon capture, use, and storage (CCUS) technology, smart grids, and stationary storage, as well as upgrading digital infrastructure to meet the requirements of the digital age.

On the physical Infrastructure side, the strategy outlines plans to rebuild and upgrade highways, roads, and bridges by making federal funds available to states, cities, and towns, as well as by capitalizing the Highway Trust Fund. Goals also include expanding high-speed railways across the country and providing American cities with 100,000 or more residents with federally funded zero-emissions public transportation

How this "green vision" will translate into a tangible strategy, committed funding and projects remains to be seen. There are expectations that the new federal administration will see a shift in priorities from 'traditional' infrastructure towards 'green' initiatives and sustainability. What this means in terms of scope and scale remains to be seen, but we do expect an increased focus on energy efficiency of buildings and sustainable, efficient transportation.



BUILDING COSTS

+ SUPPLY CHAIN CAPACITY

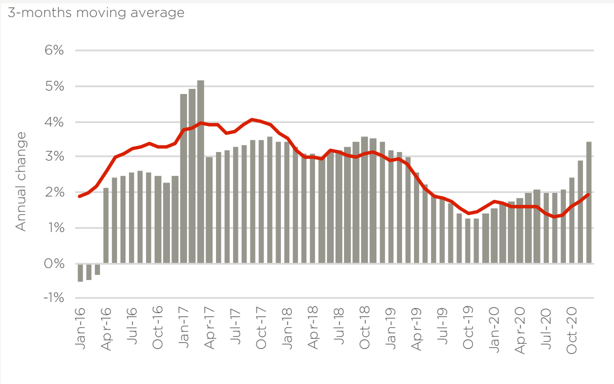
National building costs

National building input cost inflation (BCI), which contains a higher portion of skilled labor, ticked up by 2.3% year-on-year in 2020, driven by higher material prices.

Average construction cost inflation slowed slightly to 1.6% in 2020, compared to 2% in 2019, due to a stronger slowdown in common labor cost increases (chart 20). Comparative building cost across our main markets are shown in chart 21.

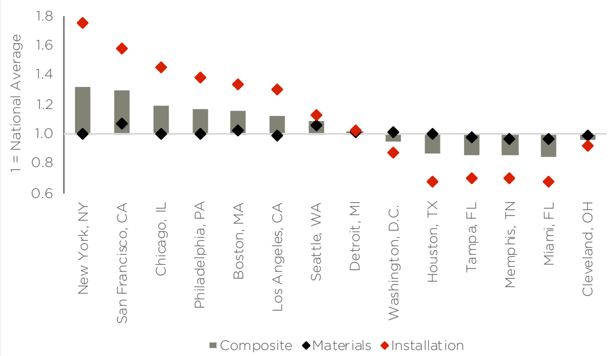
	2019	2020
Skilled Labor	1.9%	1.6%
Common Labor	1.9%	1.0%
Materials	3.3%	3.9%

CHART 20: CONSTRUCTION COST TRENDS



Source: ENR

CHART 21: LOCATION COMPARISON



ENR, Dharam Consulting

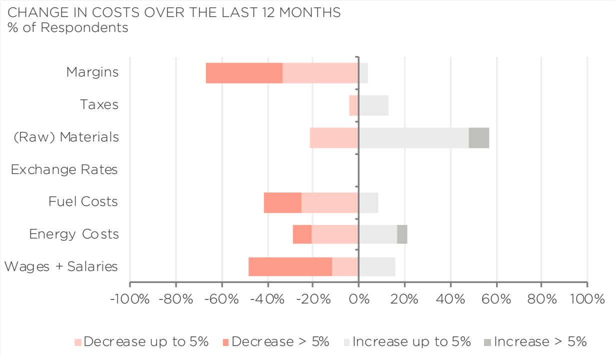
Input Cost Trends

Our survey respondents reported a mixed picture of input cost trends in 2020. In contrast to ENR data, nearly half of survey respondents report that wages + salaries decreased, with more than a third reporting cuts of over 5%. A large share of 36% reported no changes in wages + salaries. Materials exerted the most upward pressure on cost, with 56% reporting increases in 2020, most of which in the range of up to 5%.

Most reported no change in fuel and energy costs, though there was a significant share who saw their fuel costs increase (chart 22).

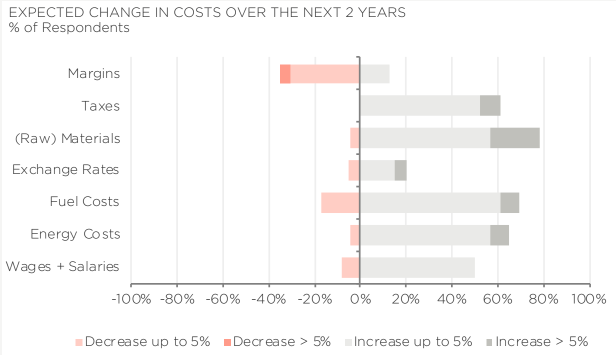
Looking ahead, the industry expects, on balance, higher input costs over the two three years (chart 23), mostly in the range of up to 5%. Most expect materials, energy and fuel costs to be the main cost drivers.

CHART 22: CURRENT COST DRIVERS



Source: Q4 2020 Dharam Construction Survey

CHART 23: FUTURE COST DRIVERS



Source: Q4 2020 Dharam Construction Survey

Market Capacity

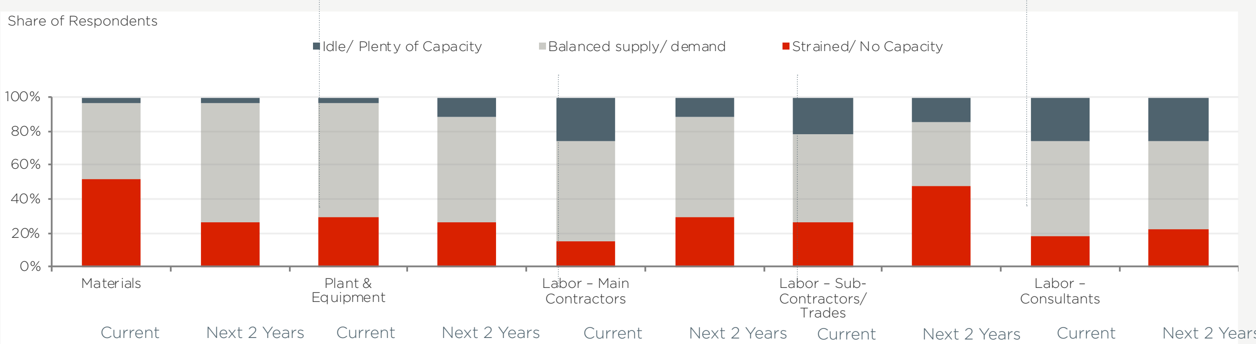
Capacity to deliver construction projects has been a major issue across many of our main national markets, especially on projects where complexity and scale forced construction firms to dip into a smaller available pool of expertise.

A slowdown in work-on-site, as well as lower order books has released capacity, balancing the market (chart 24). Consequently, nearly 60% of our survey respondents felt that there was balanced availability of main contractors in 2020. The highest number we have seen in years. 25% report that there was even an oversupply of main contractors. The market for sub-contractors also eased on average, with more than half reporting a balanced market. In contrast, the availability of materials has become a lot more constrained this year, in parts due to the Covid-19 pandemic hitting national and international supply chains.

The supply chain expects capacity across the labor, materials, and plant & equipment to generally remain in balance over the course of the next two years. The one exception is sub-contractors, where our survey respondents foresee a return of some capacity constraints. Overall and on average, the figures point to moderate construction price inflation over the next year.

Uncertainty over the demand is likely to make businesses reluctant to invest in new resources and expand capacity in anticipation of an increase in workload over the course of 2021. On the back of this, we can imagine a scenario where the release of pent-up demand could cause a sudden spike in work on site, with contractors and trades having to ramp up activity, scrambling for suitable resources, a process which could put significant upward pressure on prices as market capacity tightens.

CHART 24: CONSTRUCTION COST TRENDS



Source: Q4 2020 Dharam Construction Survey

Profit Margins + Bid Submission Prices

Fewer capacity constraints and increased competition has been partially offset by higher input costs. Consequently, the majority (66%) of our survey respondents saw their profit margins fall. Within this, half reported a decrease of up to 5%, while the other half saw an even larger decrease of over 5%. Nearly a third of our respondents saw their margins hold stable.

The industry is cautious about the outlook for their margins. More than half of those surveyed expect no change and over a third anticipate a further decrease. The market is not expected to be strong enough to allow contractors to offset input cost increases with bid submission price escalation, so that profit growth expectation will remain subdued over the next 12-24 months.

Average national bid submission price escalation slowed sharply in 2020. Based on the Turner Price Index, we estimate that construction bid price growth stood at an annual 1.6%, with prices flattening over the summer 2020 and turning slightly negative in the final quarter of the year. The picture will be very different across locations and sectors. For example, in Boston, our survey respondents were very divided in their opinions, with reports of price inflation and deflation.

In New York our survey respondents active in the non-residential (commercial, education) sectors reported bid submission price drops of 5% and more, especially in the second half of 2020. Those in the infrastructure and public sector reported moderate price increases.

Momentum in project starts and market confidence will be the key factors as we move into 2021. We have seen a solid pick up in pre-construction design work, though we expect that some of these will be pushed back or reviewed in light of still changing demand dynamics. Whilst the start of the year could be slow, order books appear to be strengthening. In volatile markets, we expect bid price variability to increase among both contractors and sectors, depending on the exposure and resilience, as well as anticipation of a return in demand. Supply chain capacity – although more balanced than in recent years - will remain a prominent cost and price driver in many locations, in particular for specialist trades.

COMMODITIES

+ BUILDING MATERIAL PRICES

After an initial plunge in the first quarter of 2020, commodity prices rose across the board, as markets appeared to shrug off concerns over a second/third Covid-19 wave in North America and Europe. Sentiment has been buoyed by strong Chinese data, vaccine optimism and news of an imminent second US stimulus package. At the same time, supply has been curtailed by production outages and supply chain disruptions.

Oil prices rose from April's low of $17.6 bbl to $48.59 in December. This is still markedly lower than levels seen at the start of 2020. Copper rose to $7,839/ ton in December, a seven-year high (chart 25). This will have a direct impact on many MEP products.

Domestically, increased prices and longer lead times were the themes in the building materials market in many parts of the country since August 2020. In the three months to November the index for material inputs to construction industries showed a moderate 1% year-on-year increase (chart 26). The ENR reports a 3.9% annual increase in material price inflation, with the index surging by 8% year-on-year in December (chart 27).

Lumber saw the largest volatility over the course of the year, spiking in August, retreating modestly in fall 2020 before seeing another significant increase towards the end of the year (chart 28).

The reasons for this spike are a combination of:

» Supply disruption, as a significant number of mills were either shut down or had enacted production reductions during the Spring 2020 pandemic restrictions. Much of the capacity is back online, but bottlenecks are yet to be resolved.

» In the structural panels market, hurricane Laura in August worsened an already tense supply situation, knocking out power to OSB mills in Texas and Louisiana.

» Stronger than expected demand for structural panels and framing lumber from a firm US house building market.

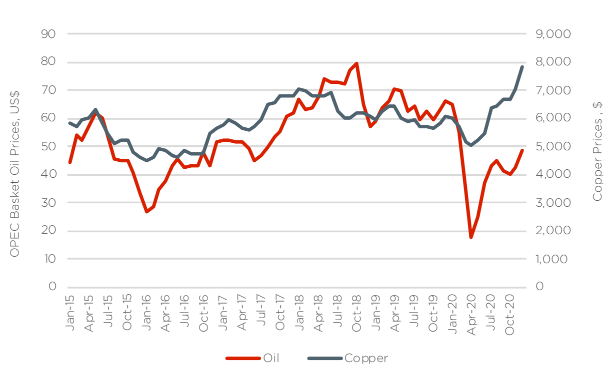
» Unseasonably strong demand for softwood lumber is keeping prices high in the winter months.

» Trade policy and tariff levels have not changed significantly since 2019, but are having an ongoing impact on lumber and log volumes in several markets.

As a result, inventory levels and availability have been reduced and prices have doubled since April.

Steel prices have also increased significantly since summer 2020. Major US steel producers and manufacturers have announced a series of price increases for plate, sheet, and tube products since August.

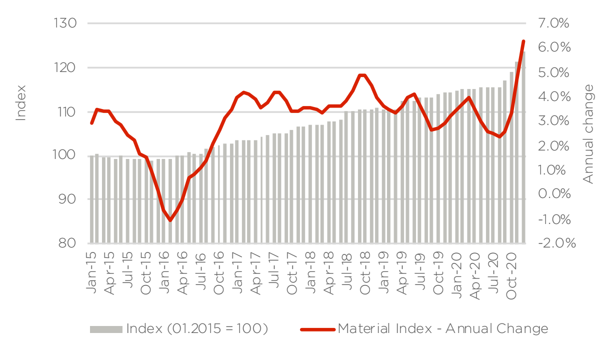
CHART 25: COMMODITY PRICE TRENDS



Source: LME, IMF

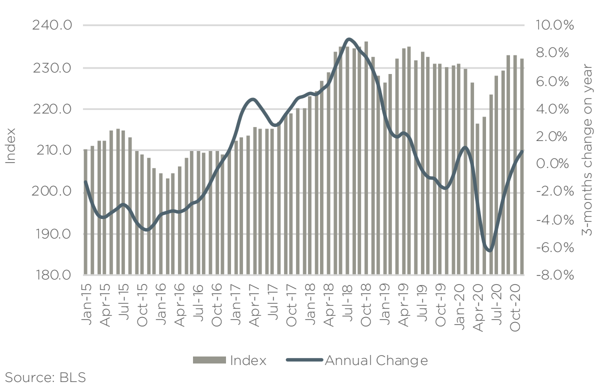
CHART 27: ENR MATERIALS INDEX

3-months moving average



Source: ENR

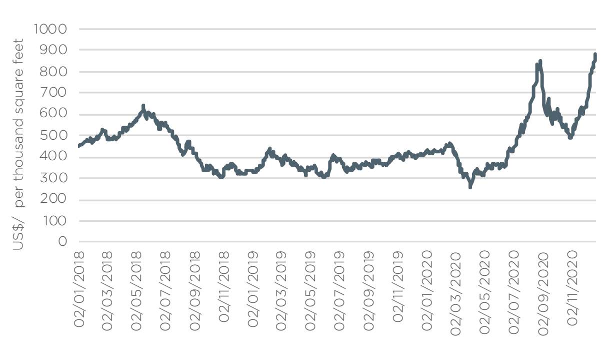
CHART 26: INPUTS TO CONSTRUCTION - MATERIALS INDEX



Source: BLS

CHART 28: LUMBER PRICES

CME Random Length Lumber Futures



Source: CME

Nucor for example announced the following and other producers have announced similar price increases.

- Mill rolled plate (Aug 24 - Dec 14, 2020): +$330/t
- Tubing and Pipe (Aug 26 - Dec 11, 2020): +$525/t
- Mini Mill - Angles, Flats, Channels, and Rounds (Sep 14 - Dec 18, 2020: +$170/t
- Beams (Nov 2 - Dec 18, 2020): $205/t

Whilst demand has improved, price increases are primarily driven by supply disruptions and low inventories, and may as such prove short-lived. Additional supply from major producers such as Big River Steel, Steel Dynamics, Nucor and ArcelorMittal is expected to come onto the market over the next 1-2 years, which may not sustain the current rise in prices.

Global chemicals prices contributed to a significant rise in plastics building material prices. Other materials, such as concrete products have also increased in recent months (chart 29, table 1).

Rapidly rising materials costs are difficult to absorb in a market that has seen increased competition among contractors and sub-contractors. At the same time, project owners will have to assess the impact of higher prices on their construction budgets. This could involve reviewing specification and a substitute to cheaper construction materials, or redesigning projects (adjusting scope and size). The cost volatility means that the contracting market will remain vulnerable.

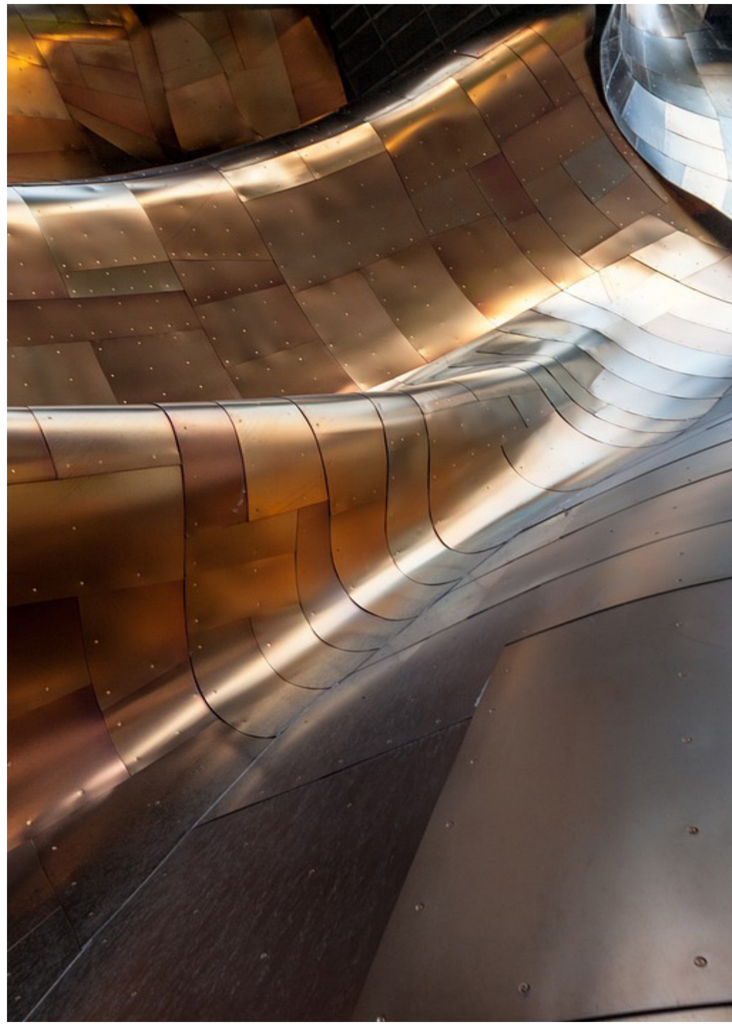


CHART 29: DOMESTIC BUILDING MATERIALS

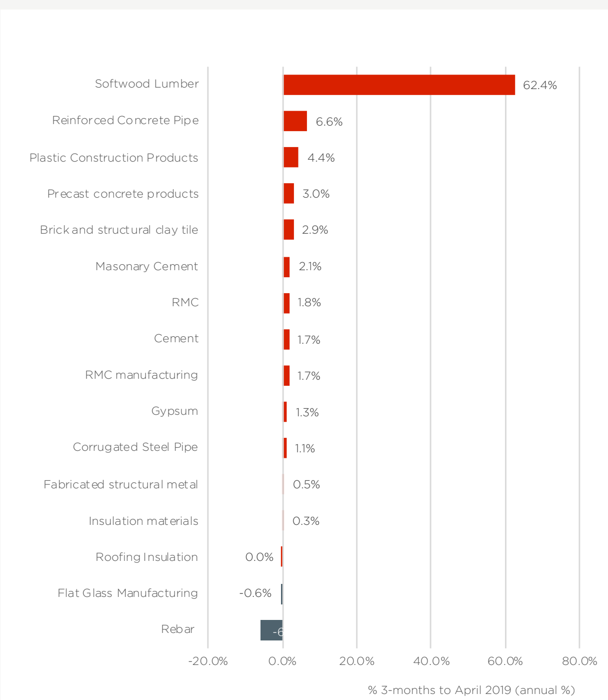


TABLE 1: MATERIAL PRICES

Material	Unit	Date	Price		3 months annual Change %
Reinforced Concrete Pipe	"24, $/ft	Dec-20	36.9	▲	6.5%
Corrugated Steel Pipe	"36, $/ft	Dec-20	35.1	▲	1.1%
Roofing Insulation	Unfaced, $/sf	Dec-20	8.42	▲	1.3%
Masonary Cement	70-lb bag, $/ton	Dec-20	10.88	▲	1.3%
RMC	4,000psi, $/CY	Dec-20	139.61	▲	2.5%
Rebar	Grade 60, $/CWT	Nov-20	50.63	▼	-7.5%
Steel Plate	ton	Oct-20	648.3	▼	-7.8%
HRC	ton	Oct-20	657.3	▲	17.9%

PHILADELPHIA

MARKET OVERVIEW

City Economy

State- and City-wide construction was deemed non-essential during the March 2020 “stay-at-home” order, with work on site ordered to halt. Restrictions were relaxed slightly for emergency repairs and construction of healthcare facilities. After a few weeks, critical projects were given a green light by the Pennsylvania government to get restarted, including several large transportation related projects. Construction was authorized to restart on May 1.

The shutdown in Philadelphia was more restrictive and lasted longer than in many other regions of the nation, impacting the local economy heavily. A large proportion of jobs (around 70%) in Philadelphia are in one of the industries impacted by the stay-at-home order, and not all were able to move to home office work. Consequently, job numbers plunged and the wider Philadelphia metro area lost some 430,900 jobs between January and April 2020. Activity and jobs started to recover in late summer with the lifting of restrictions but overall employment remains nearly 5% lower than at the start of the year. The impact of renewed regulations on business activity enacted by local and state governments in November is likely to put the brake on a recovery that had just begun.

We expected that Philadelphia will be one of the laggards of the economy recovery, due to its large share of sectors that have been most impacted by the pandemic recession: arts, entertainment + recreation, retail, hospitality, and education. Its largest industries, education and healthcare whilst hit heavily, are expected to lead the local economy out of the crisis over the course of 2021 once the vaccine program gathers enough pace to give consumers and businesses confidence to spend and invest. Logistics and warehousing have weathered the downturn relatively well and are also expected to drive growth going forward. We feel that it may take until the latter half of 2021 for a meaningful recovery to take hold.

Construction Activity

Construction activity peaked in 2019 and was expected to slow over the subsequent two years. This trend has been aggravated by the pandemic-related shutdown, which stopped projects on site. At the same time we saw pre-construction planning and design work put on hold, as clients reviewed their portfolio and project scopes in light of changing demand and cash flows. We estimate that in summer 2020, architectural billings were down between 30-40%, indicating the extent of the impact of the economic fallout on the projects market.

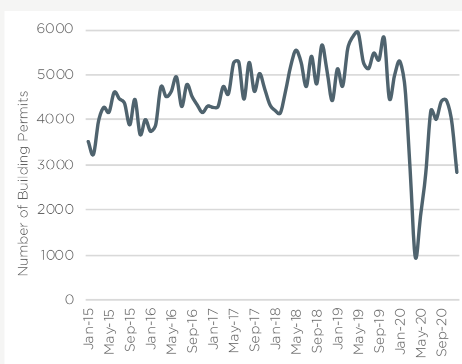
Total construction-related permits issued by the City’s Department of Licenses and Inspections dropped off significantly in the first half of 2020 (chart 30). Permits rose between July and October, before a resurgence in Covid-19 cases renewed uncertainty in the market, leading to a pause in permitting.

Reflecting the decrease in construction and design work, the wider Philadelphia construction industry lost some 35,800, or 32% of jobs between January and May 2020.

Our view: Construction activity peaked in 2019. The expected slowdown in pipeline work was exacerbated by the pandemic related shut down in projects on site, which was accompanied with a postponement of planned construction starts.

Bid submission price inflation stalled in 2020. Momentum in prices at the start of the year was offset by moderate price declines in the latter half as competition increased significantly. Project starts are expected to remain subdued in 2021, but a firm rebound in pre-construction design work is forecast to lead to fuller contractor order books from 2022. Consequently, we forecast bid submission prices to remain relative unchanged in 2021 (-0.5 - 1.5%), before more work will put modest upward pressure on bid prices in 2022.

CHART 30: BUILDING PERMITS



2016	+9%
2017	+8%
2018	+4%
2019	+8%
2020	-34%

Source: L&I Building + Zoning Permits

A restart of work in May helped employment levels to rebound, though in November 2020 jobs remained 3.8% down compared to the start of the year (chart 31).

New project starts have lagged the recovery on site and we saw projects that were meant to break ground in the second half of the year moved to the first half of 2021. Dodge estimates that the starts decreased by 4% in 2020. We saw a larger drop of around 15% to $8.2 in 2020 (chart 32). Retail, hospitality and commercial starts dropped by more than half. Museums and cultural related starts were nearly non-existent. The one bright spot in non-residential building work was the warehousing and distribution sector, which is seeing increased investor appetite. Institutional construction starts – education, health and public work – all weakened as institutions saw with their attention firmly on immediate pandemic response and business continuity efforts. One notable exception was the $327m Riddle Hospital renovation by Main Line Health, which was delayed due to Covid crisis, but eventually broke ground in October 2020.

Single residential work held stable, but multi-residential starts also paused. Infrastructure work continued to proceed with new projects on site partially benefiting from work being allowed to progress on priority projects during the year and transportation agencies taking advantage of low ridership and empty roads to speed up deferred maintenance works.

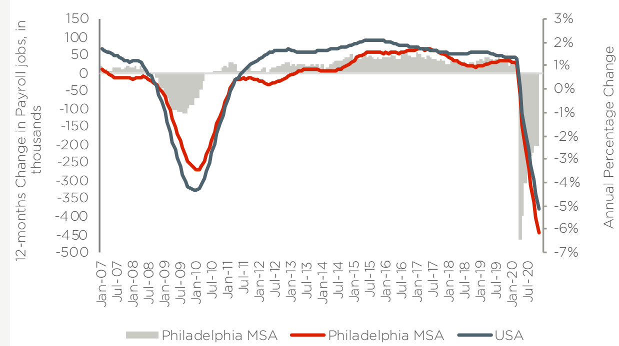
Dodge forecasts another dip in construction starts in 2021 (-3.9% to $7.7bn). Commercial, hospitality and education projects are expected to remain subdued. The commercial offices market in particular will take some time to assess future space needs. It is widely expected that workers will return to offices eventually, but it is likely that an hybrid form of working from home/office work will be much more prevalent than in the past. Residential work is buoyed by single-residential starts, while multi-residential starts will only pick up at the end of 2021. We share the view, but are somewhat more optimistic for education projects, with industry sources indicating that clients such as UPenn are continuing to move their projects as planned through the design stages.

In terms of pre-construction work, clients took a wait-and -see approach throughout summer and activity remained subdued in July to September. Encouragingly, since mid-September we have a significant increase in the number of project proposals, not only for deferred maintenance but also new work. Clients are moving ahead with design work, with a significant number of projects starting into the early design phases. Assuming a 2-year design timeline, these projects are likely to feed into a rebound in project starts in 2022.

Current Pipeline

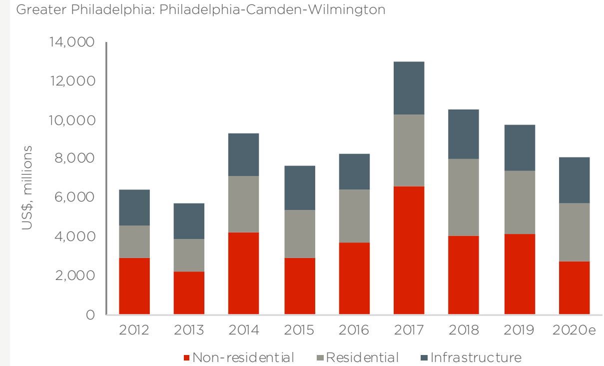
Our estimation of construction cash flows based on our major projects pipeline of known projects in Philadelphia is shown in chart 33. We had expected a moderation in workload from 2020, after a peak in 2018/19. The decline in work on site during the first half of 2020 was unsurprisingly deeper than thought. We expect the backlog of work to remain subdued throughout most of 2021. The full extent of the significant rise in pre-construction work that we are currently seeing in the market will play out in 18 to 24 months, so that we expect contractors to be sufficiently busy again from 2022, the start of a new construction cycle.

CHART 31: PHILADELPHIA EMPLOYMENT TRENDS



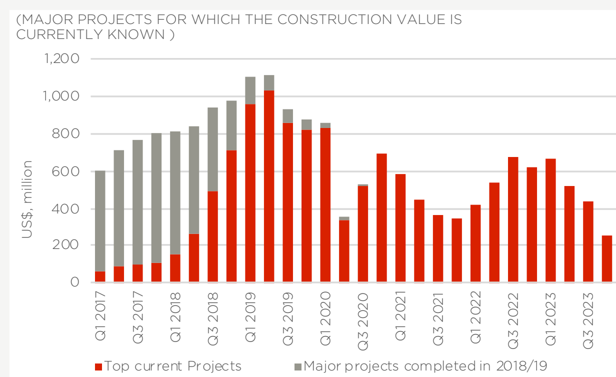
Source: BEA, Dharam Consulting

CHART 32: PHILADELPHIA PROJECT STARTS



Source: ENR, Dodge Data

CHART 33: ESTIMATED CONSTRUCTION CASHFLOW



Source: Crains Detroit, BLDUP, Dharam Consulting

Philadelphia

Philadelphia

We do see clients accelerate the design on some projects with a view to achieve 100% CD in the latter half of 2021. This could lead to a scenario where we see a relatively high number of projects being tendered in the final quarter of the year, creating excess demand and potentially driving up bid prices.

After a period of adjustment, we do expect the roll-out of master plan developments in the market, including the Delaware River Trail (in preliminary design) and Penn's Landing, where preliminary engineering and design is currently underway, and 100% CD is slated to be completed by 2021.

Work on the University City Campus, that includes Schuylkill Yards by Brandywine Realty Trust, in partnership with Drexel, had been halted by the pandemic stoppages but then resumed in 2020. According to Drexel some of the projects currently underway will be completed as planned, while others are having their timelines adjusted and are expected to be completed later than previously planned. None of the projects appears shelved.

Local Building Cost and Supply Chain Capacity

Local building costs in 2020 were 20% higher than the national average, due to the higher cost of skilled labor. Building cost inflation in Philadelphia stood at 4.5% in 2020, according to ENR figures, due mainly to a 5% increase in the skilled labor index. The common labor cost index for Philadelphia recorded a much lower increase of 1.4% in 2020. Current prevailing wage in the local markets are shown in chart 34. Between 2019 and 2020 there were only modest 0-3% increases in the prevailing wage rates.

Resource availability within the local construction supply chain has become more balanced towards the end of 2019 and even more so in 2020. There are currently no visible labor constraints. Given the dominance of union work in the market there is little scope for price decreases on the labor side.

Material cost increase averaged 3.4% in 2020, but this masks the sharp increase in prices of some materials that we have seen in the final months of 2020. The building materials index in December 2020 recorded a nearly 12% year-on-year increase on the back of sharp rises in the price of lumber, PVC piping, copper materials and steel. We have seen a shortage of MEP material supply, as well as for wood framing, with longer lead times and higher prices.

Bid submission prices

Bid submission price inflation slowed sharply in 2020. Some momentum in prices carried over from 2019 into the first months of 2020. However, as order books dwindled over the course of the year the market became increasingly competitive, as contractors and sub-contractors keen to secure backlog reduced OHP margins. Consequently, we estimate that construction prices overall were unchanged in 2020, with an early rise offset by lower prices in the second half of the year. Bid submission prices are expected to remain unchanged in the first half of 2021 and only a small rise is expected in the latter half of the year, as new projects increasingly start to be tendered.

Our central forecast scenario anticipates a moderate return of bid submission price inflation in 2022, as the market recovers (chart 35). However, based on the firm levels of pre-construction work that we are currently seeing and the expectation that some clients could accelerate design work to take advantage of more favourable pricing conditions, we could foresee a scenario where an increase in main construction works RfP's could push up bid submission prices stronger than thought in early 2022. Bid price variability is expect to be elevated over the next two years.

CHART 34: PHILADELPHIA PREVAILING WAGES

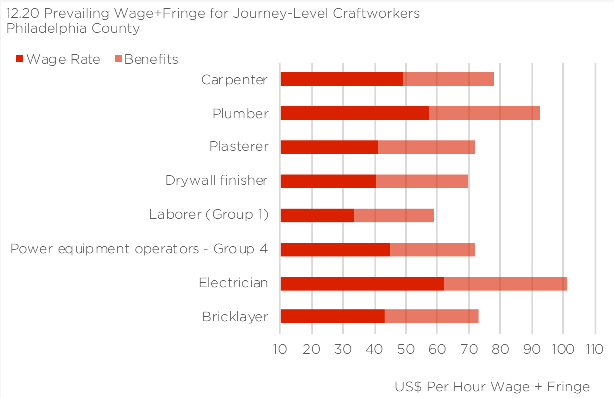
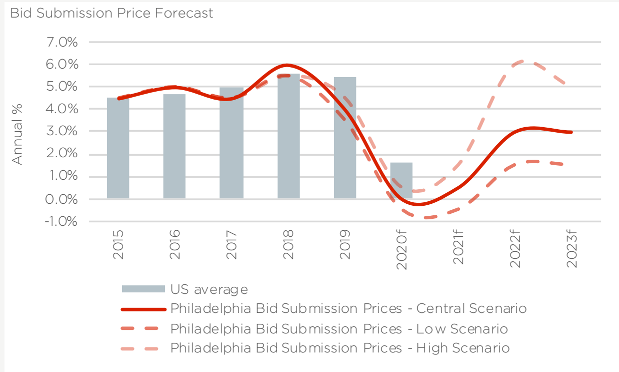


CHART 35: PHILADELPHIA BID SUBMISSION PRICE FORECAST



Source: Dharam Consulting, Turner Construction

NEW YORK
MARKET OVERVIEW

City Economy

The Covid-19 pandemic hit NYC as an early epicentre of the crisis harder than many other places, forcing the city to shut down entire industries. The economy sustained massive losses, jobs declined faster and partially recovered slower than in the rest of the country. Unemployment in the City rose from 3.4% in February 2020, the lowest rate on record, to 20.4% in June 2020, the highest ever on record. Unemployment in October 2020 eased moderately to 13.4%.

Leading indicators of business activity reveal the caution and nervousness in the market.

A tentative reopening in the summer months was met with cautious optimism and business conditions improved in September and October 2020, only to fall back in the final months of the year on renewed fears over a resurgence in infections.

Whilst activity is still weak, not all the news is grim. Financial services have by and large performed well and construction is allowed to continue. Most economic commentators expect NYC's economy to expand next year, in line with wider trends, though growth is expected to lag the national average (chart 36).

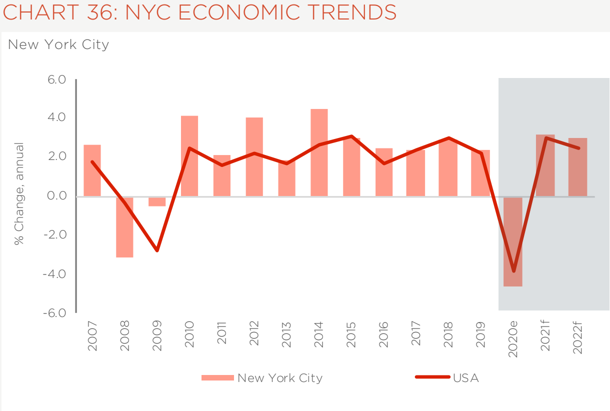
Consequently, jobs are expected to recover more slowly and it will take well into 2022 for jobs to reach pre-crisis levels. Much hinges on the appetite of workers and corporate activity to return into dense office towers.

A trend in 2020 was the increased move of investment and corporate workspace out of New York to other locations, such as Florida, where business costs are cheaper and cities are less dense, affording workers the options to opt out of mass transportation. If this trend accelerates, questions will be raised about the business model of the city and future commercial footprint requirements.

Construction Activity

Construction jobs plunged as sites closed and activity ground to a halt in March/April 2020. Not only did work on site all but stop, architects and designers were also told to slow and or stop ongoing design work.

CHART 36: NYC ECONOMIC TRENDS



Our View: NYC construction is showing resilience, with projects increasingly being released after being put on hold by shut down orders and by clients re-assessing their capital spending plans over a suddenly very uncertain outlook. Contractor order books are tentatively being refilled with infrastructure, public and institutional building work.

Construction price escalation slowed significantly in 2020, reflecting an easing in capacity constraints, though we have not seen any deep discounting by contractors to win work. Material prices and higher Covid-19 related business costs put a floor on prices. Clients who proceed early in 2021 with their projects are likely to benefit from stable prices, before an increasing number of projects in the final design stages point to a return of price inflation at an initially moderate pace in the latter months of 2021.

This has not only been the case for private but also for public projects. In April, the majority of DDC projects bar those deemed essential were put on hold, impacting programs across deferred infrastructure maintenance, public housing, libraries, schools and other municipal buildings. According to the NY Comptroller, some $4.2 billion in planned City capital projects were moved from fiscal years 2020 and 2021 into later years.

Reflecting the halt in construction and design work, the industry in the wider metropolitan area lost some 141,800, or 36.2% of jobs between January and May 2020. Construction was permitted in the first phase of reopening and the New York metropolitan area added 133,200 jobs from April to October, leaving industry employment down 2% in the year-to-date. Whilst the rebound in the headline jobs figures is encouraging, it is worth noting that the wider metro area performed significantly better than NYC itself. In NYC, construction employment in October 2020 remained down nearly 7% compared to the start of the year. Specialty Trade Contractors, Building Finishing Contractors and Building Equipment Contractors in the City saw heavy job losses across the board (chart 37).

Project starts plunged in the second quarter of 2020, but encouragingly appeared to stabilize in the second half of the year. Overall, we estimate, that the value of starts declined by 10% to $46.6bn, with infrastructure projects offsetting some of the slack in the residential and non-residential building market (chart 38).

Unsurprisingly, the value of non-residential starts dropped most, falling from $22.6bn in 2019 to an estimated $18.5bn in 2020. The decrease has mainly been due to a sharp decline in commercial project starts, which dropped to $10.9bn ($14.7bn in 2019), as the pandemic-caused recession put a stop to many offices, hospitality + leisure, as well as retail projects. On a positive note, the $2.3bn One Madison Avenue commercial mixed-use development broke ground in the final quarter of the year. The one sub-sector to perform well was manufacturing, due to increase in warehousing project starts. The value of institutional project starts, at an estimated $7.6bn also weakened (-4%), as fewer education and public sector starts were only partially outweighed by a higher number of healthcare projects.

The value of residential project starts declined to an estimated $16.3bn, as the market continues to absorb the high number of high-rise high-end projects delivered over the past years. Nevertheless, a number of large multi-residential buildings did break ground this year, including the $386m Waterview at Greenpoint project in Brooklyn and the $250m mixed-use project on 31-145 47th Street by Silverback Development.

The value of infrastructure project starts is estimated to have reached $11.8 billion in 2020, up 40% on 2019, driven by increased highways and roads works and some $2.7 billion worth of energy-related project starts.

Contractors saw a relatively consistent workflow at the start of 2020 on the back of projects that kicked-off in 2019, but as the year progressed construction managers became increasingly concerned about the level of their order books going into 2021.

CHART 37: NYC CONSTRUCTION EMPLOYMENT

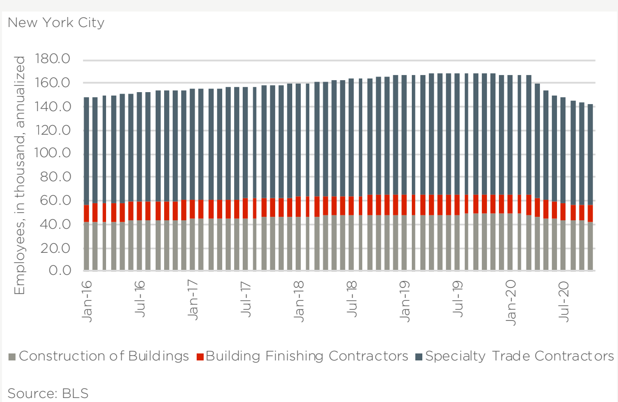
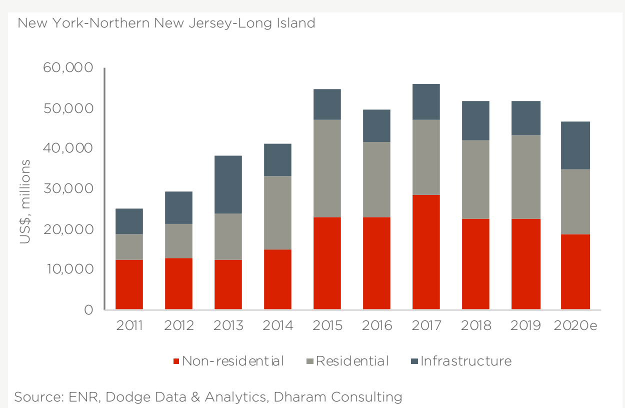


CHART 38: NYC CONSTRUCTION STARTS



The New York Building Congress (NYBC) estimates that the value of construction spending reached $55.5bn in 2020, down 8.5% year-on-year. Residential work totaled $17.8bn, down from 2019's peak of $19.7bn. Non-residential construction saw a much larger drop to $16.6bn, down 22% from $21.2bn delivered in 2019. Infrastructure work increased, as construction resumed after the shelter-in-place orders in spring 2020. According to the NYBC, the Metropolitan Transportation Authority (MTA) will spend $8.7bn in 2020 on capital projects, compared to $8 billion in 2019. The MTA prioritized some projects, taking advantage of low ridership during lockdown, but some large shcemes within the $51.5bn 2020-2024 capital program are being delayed.

We expect the project procurement market at the start of 2021 to remain relatively soft before picking up speed over the course of next year. The NYBC forecasts the value of total construction to reach $56.9bn and $56.1bn in 2021 and 2022, respectively. Sector employment is expected to increase in 2021, but employment for 2020-22 is expected to average 14% fewer construction jobs compared to the 2017-19 period.

The trend is not universal, with some sectors performing better than others. Contractor order books are tentatively being refilled with infrastructure, public and institutional building work, while residential, commercial and hospitality & leisure projects are widely expected to remain weak. Residential work is expected to see a double-digit decrease in volume over the next two years before starting a recovery.

Non-residential construction is expected to remain subdued, in particular new office shell + core construction, hotels and sports and entertainment venues.

A somewhat brighter spot could be office interior renovations and remodelling work. Institutional development – both healthcare and education – is expected to stabilize in 2021, benefiting from pent-up demand. After a brief hiatus, the education sector is expected to be one of the leading markets in terms of growth over the coming years.

Important for the resilience of the local market will be the performance of the infrastructure and public sectors. The industry will be looking to agencies such as the DDC to restart their capital program. This includes progress on projects such as the $1.45 billion East Side Coastal Resilience Project, which has completed its permitting process in 2020. The $8.7 billion scheme for four new jails to replace the Rikers Island jail complex, scheduled to be completed by fall 2026, has been pushed back by one year, but encouragingly design on the project is moving ahead.

Public works will look for some additional federal funds to move forward, which would be particularly important to give the Port Authority of New York and New Jersey confidence to maintain their planned capital budgets. At the moment, spending calls for a 2021 austerity budget, in which capital construction spending has been slashed to $2.4bn, down $1.2bn from previous plans.

Local Building Costs and Supply Chain Capacity

Building costs in NYC remain higher (53%) than the national average due mainly to the cost of construction labor. ENR figures show that building costs in New York rose by 2.6% in 2020, while construction cost were up by 3.8%. Both indices show input costs increases above the national average (chart 39).

The New York construction market of recent years had been characterized by a shortage of skilled trade labor, especially for electricians, plumbers, and sheet metal workers. Whilst we do see a marked easing in these constraints, we do not foresee any oversupply of trades so far. Covid-19 related social distancing measures and other precautions have negatively impacted the levels of productivity on construction sites.

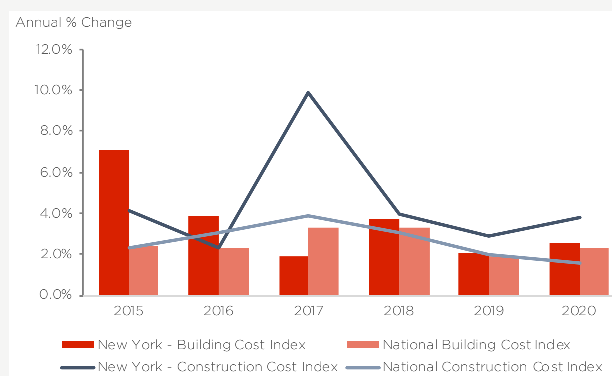
The ENR skilled labor cost for NYC index increased by 2.5% in 2020, while the common labor cost index rose by 3.9%, both increasing significantly faster than the national average.

Prevailing wages for specific union trades are shown in chart 40. Non-union wage levels can vary considerably, but are seen as substantially lower than prevailing wages, especially on the benefits side. Non-union wages are also subject to market demand fluctuations.

According to industry reports, open-shop wages for the same trades can be 30% that of union trades and depending on the project requirements for contractors/ sub-contractor deployment this will have a large impact on construction costs. We expect the trend of the increasing share of open-shop work undertaken to slow over the next 12 to 24 months, on the back of fewer residential and commercial projects. The increase in infrastructure and public institutional work is set to benefit the union construction market.

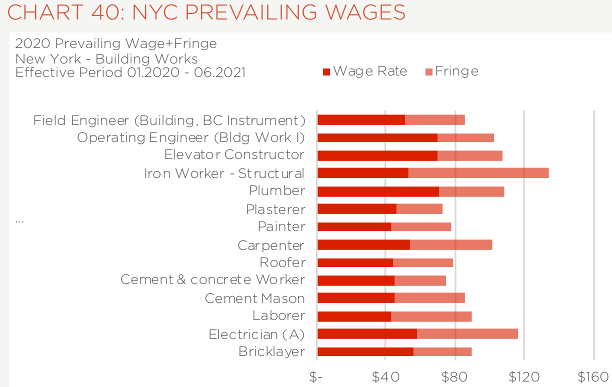
Our view: We see a further balancing in the supply of labor in early 2021, but do not expect a significant overhang in resources given the tightness in the market in the preceding years. In the near term, project owners and developers who will move their projects forward over the next year will have more choices and potentially a wider range of competitive bids, as contractors and trades will be keen to secure their order books. Pressure from material prices and long-established shortages of skilled labor are is likely to put a floor under price levels.

CHART 39: NYC BUILDING COST



Source: ENR

CHART 40: NYC PREVAILING WAGES



Source: NYC Comptroller

New York City

Current Construction Pipeline

Chart 41 shows our near to medium term estimation of construction cash flow based on our major projects pipeline of know projects. Quarterly construction cashflow started to slow in 2019 as a number of very large projects were completed. 2020 saw many developments put on hold, while others did not make it off the drawing board, as project owners re-assessed their risk exposure to the unprecedented economic crisis caused by the pandemic. Whilst we expect the start of 2021 to see lean order books for contractors, the current pipeline indicates that project flow is expected to pick up during the second quarter of 2021, as projects on hold are now being released, with project owners increasingly confident of a path forward for the construction industry on the back of a vaccine program and fiscal aid. It is mainly infrastructure projects, such as airport-related work, roads and bridges as well as transportation schemes that are expected to underpin industry workload near term.

Respondents to our industry survey indicate that they expect design teams to start getting busy again on building work in summer 2021, as pent-up demand is fuelling the risk appetite of developers and project owners, especially in the healthcare, education and public sectors. Higher education clients are also pushing ahead with capital programs, in particular those associated with maintenance and renovations, including upgrades to energy certificates and achieving compliance to higher energy codes. We share the view that residential and commercial construction, including offices and hospitality + leisure, will decline significantly over the next 12 months at least and expect a pick-up in starts on site not before well into 2022.

This market trend may prove a boon for public sector clients who move their projects forward, as they will be competing against fewer private-sector projects for resources and labor.

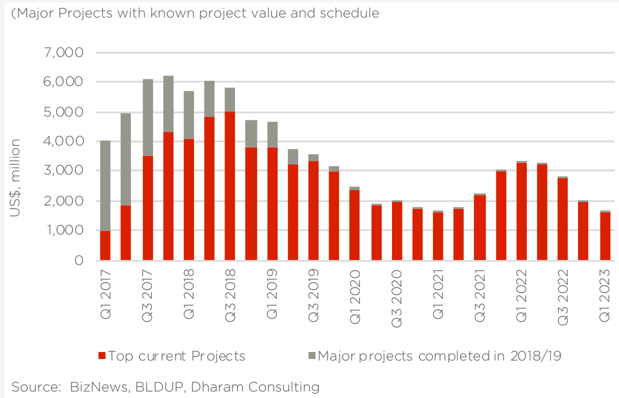
Bid Submission Prices

Average bid submission price inflation in NYC has been largely in line with the national average in recent years. Within sectors and among projects, cost escalation in New York can vary significantly, depending on the type of labor agreement and sector specific demand levels. For example, commercial offices have seen higher bid submission escalation in recent years. The slowdown in work in particular in this sector over the past year, coupled with fewer residential high-rise, hospitality and leisure projects is estimated to have dampened price escalation in 2020 significantly.

At the same time, despite the drop in the work on site and new construction starts, we have not observed that increased competition among construction managers, sub-contractors and designers has led to any significant price discounts. In parts, the easing in capacity constraints and resulting downward pressure has been outweighed by higher material costs and Covid-19 related increase in business costs. Consequently, we estimate that price escalation stood at up to 2% in 2020.

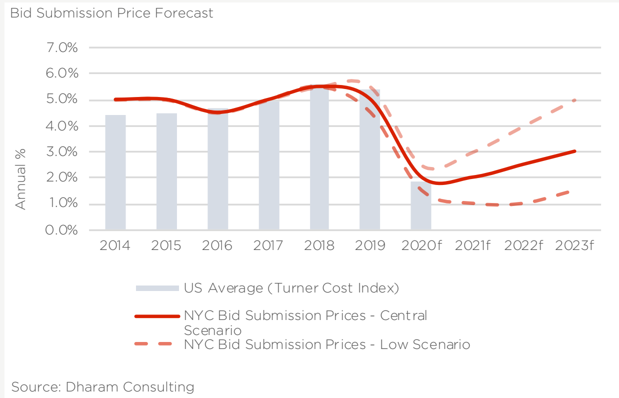
Our central scenario foresees a modest level of bid submission price inflation in 2021 and 2022, averaging between 2 – 2.5% per annum. Prices are expected to remain fairly flat in the first half of 2021, before a pick up In starts on site will put modest upward pressure on bid submission prices (chart 42).

CHART 41: ESTIMATED CONSTRUCTION CASHFLOW



Source: BizNews, BLDUP, Dharam Consulting

CHART 42: NYC BID SUBMISSION PRICE FORECAST



Source: Dharam Consulting

BOSTON

MARKET OVERVIEW

City Economy

The strict lockdown imposed in mid-March 2020 on Boston and nearby communities shut down almost all sectors of the economy and brought public life to a screeching halt. Strict measures meant that activity and jobs dropped at a faster pace than in many other regions of the nation.

Unemployment rose from just 2.1% in December 2019 to a record high of 17% in June 2020. The outlook turned cautiously positive in summer as restrictions were partially lifted and activity appeared to bounce back firmly. In autumn, Massachusetts' economy recorded a faster pace of growth than many other states (chart 43). This is encouraging and points to a further recovery in job levels, which in the Boston metro area were still 6.7% down in the year-to-November (chart 44). Hopes of a swift recovery may be premature however, with local restrictions reintroduced in late 2020 amid a resurge in Covid-19 cases and hospitalizations.

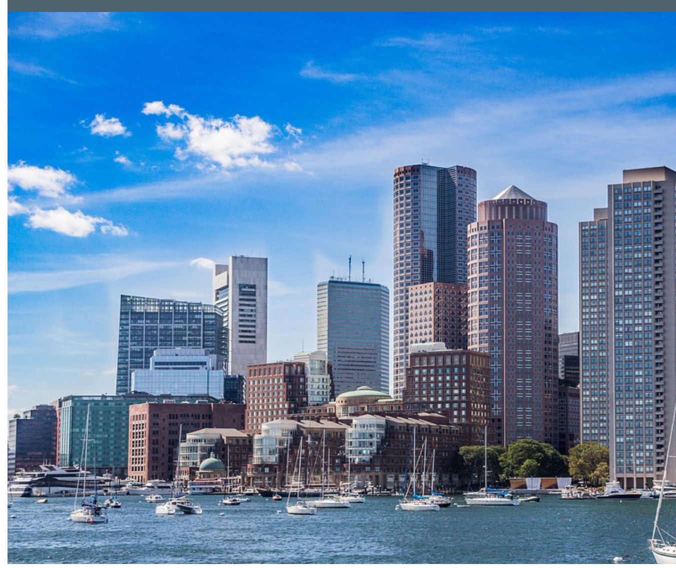
Boston's key sectors saw a mixed bag of fortunes throughout the pandemic. Education, hospitality and tourism were disproportionately hard hit and the recovery in these sectors will depend on the roll-out of a successful vaccine program, to allow institutions to re-open their doors and visitors to enjoy the city.

Assuming an effective inoculation program will facilitate the transition to the post-pandemic economic recovery, we are confident that Boston's largest sector, healthcare, together with the biotech and life sciences industries will provide stability to the market in early to mid-2021 until other sectors catch-up. The fundamentals of the Boston economy are still there and should support a firm recovery: an educated workforce, expansion of key growth sectors creating long-term employment opportunities, and demand for space across many sectors.

Construction Activity

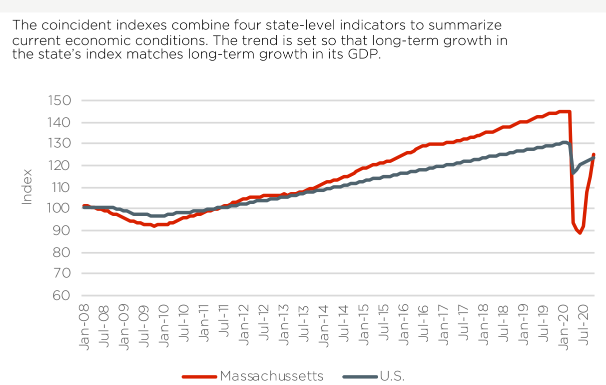
Construction activity in Boston peaked at the end of 2019 and the development pipeline of new work had started to moderate, a trend that was widely expected to continue in 2020.

Our view: The events of 2020 caused the projects pipeline to decline significantly more than previously expected, with the schedule of projects extended and new projects postponed. The pace of bid submission price escalation slowed significantly, with prices stalling and even falling moderately in some sectors in the second half 2020, as contractors cut margins and capacity constraints previously seen in the market eased. Prices are expected to remain at current levels in the first half of 2021, before the increase in pre-construction work seen already at the end of 2020 will increasingly feed into project starts towards the end of 2021. We see the risk to bid submission prices on the upside. A large number of new projects could come onto the market at the same time towards the end of 2021 and early 2022, which could cause a spike in demand for trade resources and a jump in cost escalation.



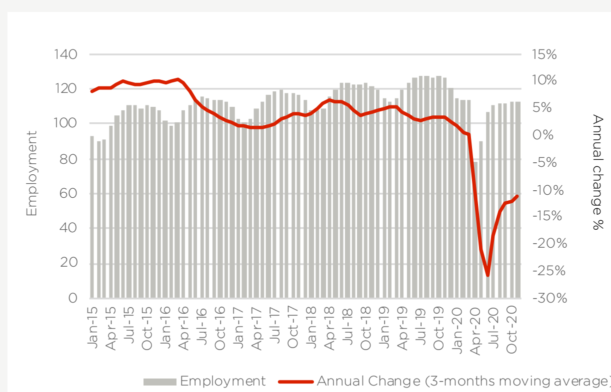
Boston

CHART 43: MASSACHUSSETTS ACTIVITY INDICATOR



Source: Reserve Bank of Philadelphia

CHART 44: CONSTRUCTION EMPLOYMENT



Source: BLS

Exceptions included emergency projects such as road-work. Work also continued on the Seaport District where projects are built on land controlled by the Massachusetts Port Authority. In the wider area, Massachusetts classified construction work as "essential", meaning construction work could continue with Covid-19 related health and safety restrictions.

Not only work on site was impacted. The sudden loss of confidence, caused project owners to slow or put on hold projects in the pre-construction design and planning phases. According to our sources, pre-construction work dropped off by up to 40% between the first and second quarter of 2020.

Reflecting the halt in construction and design work, the wider Boston construction industry lost some 36,400, or 32% of jobs between January and May 2020. Construction was permitted in the first phase of reopening and the go-button was pushed on many projects on site, which helped employment levels to recover to near levels seen at the start of the year. Overall, construction jobs were down by a modest 1.6% in the year to November 2020. After the initial round of opening, which saw construction of hospital buildings and housing allowed to restart, the remaining restrictions were lifted in June 2020 for commercial and other construction.

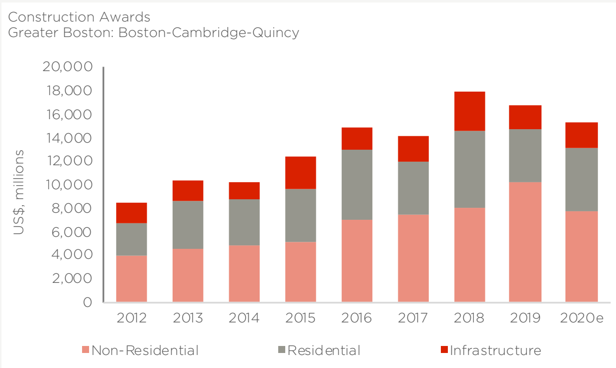
New project starts have lagged the recovery and we saw projects that were meant to break ground in in the second half of the year moved to now start on site in the first half of 2021.

Clients took a wait-and-see approach for pre-construction work throughout summer and activity remained subdued until September. In October we have seen clients and designers pulling the trigger on projects and at the end of the year we estimate that fees approached levels where they were at the start of 2020.

Dodge estimates that construction starts decreased by just 1% in 2020. We saw a large drop of around 8% to $15.3bn (chart 45). Unsurprisingly, starts slowed most in the commercial offices, hospitality + leisure as well as the education sectors. Academic building-related capital plans, a major source of industry work in recent years were put on hold, as institutions were challenged with the move to online teaching during the lockdown. Healthcare and public institutional starts also slowed, as these institutions diverted resources – both in terms of staff and capital – to the immediate pandemic response, rather than the continuation of capital works. Residential work, benefited from increased renovation and deferred maintenance work, but there were also some new project starts last year with the market still characterized by an under-supply of (affordable) accommodation options. Infrastructure work also increased, partially benefiting from work being allowed to progress on priority projects during the year.

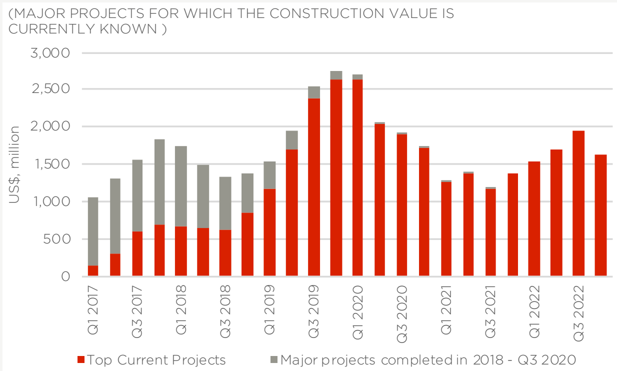
Cumming report that work-on-site volumes fell by 15% in 2020, reflecting declines across all sectors. In our survey, more than 70% of respondents from Boston report that their workload fell by more than 5% in 2020. 20% reported a more contained decrease of up to 5% and only a small minority reported stable workloads.

CHART 45: BOSTON CONSTRUCTION STARTS



Source: ENR, Dodge Data

CHART 46: ESTIMATED CONSTRUCTION CASHFLOW



Source: Crains Detroit, BLDUP, Dharam Consulting

Current Construction Pipeline

Chart 46 shows our estimation of construction cash flow based on our major projects pipeline of known projects over the next years. In our last report we anticipated that if all projects that had been planned to start on site at some point in 2019, this would move the peak of construction activity into late 2019 or early 2020. After that we saw a considerable easing in the development pipeline and a release of significant resources will be released to the market.

Given the events of 2020, the pipeline of active projects dropped significantly more in 2020, with the schedule of projects extended and new projects postponed. The near-term pipeline of active projects is significantly lower than in previous years, but encouragingly pre-construction work is picking up significantly across key sectors.

Consequently, we expect the project procurement market to improve once 2021 gets under way. As in other locations, fortunes will diverge across sectors, with healthcare, life sciences, education and residential performing better than commercial and hospitality related work.

Contractor order books are also likely to be fuller with infrastructure and public institutional work. The full extent of the significant rise in pre-construction work that we are currently seeing in the market will play out in 18 to 24 months, so that we expect contractors to be sufficiently busy again from 2022, the start of a new construction cycle.

We expect a further increase in state government spending on infrastructure including roads, bridges, rail, state schools, city-wide public buildings, and affordable housing. Consequently, we have seen architects and designers already moving into public work. Green energy related work is also likely to strengthen with a focus on retrofitting buildings, and flood-plain and river / sea barrier projects. In addition, we expect healthcare and education clients to re-start their capital programs once a clearer time horizon to the end of the pandemic emerges.

Local Building Cost and Supply Chain Capacity

The Boston construction market had been under-sourced for years, with major capacity constraints among contractors and trades. This has kept price escalation elevated for years. With the sharp drop in project work in 2020, we have seen market capacity adjusting to more balanced levels.

Respondents to our survey in Boston report that demand for main contractors, sub-contractors and consultants was broadly balanced, though 44% saw an oversupply of consultants and a third saw plenty of capacity on the main contractor side. Reflecting disturbances in the supply chain throughout 2020, a large share of respondents (44%) report capacity constraints on the building materials and plant + equipment side.

Looking ahead, our survey respondents see capacity in the Boston market to remain more in balance over the next 12 to 24 months, with half of those surveyed expecting the supply of material, plant + equipment, main contractors and consultants to be sufficient to meet demand levels.

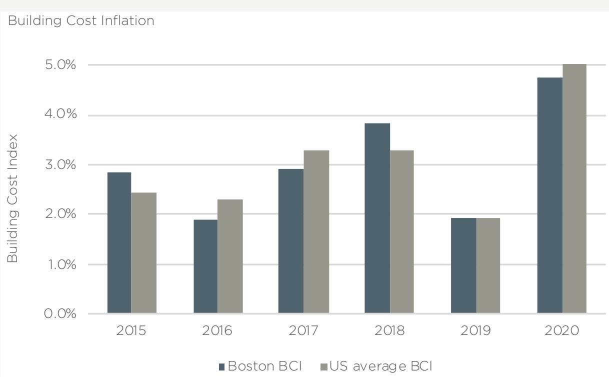
However, the other half expects a stronger demand for resources, with materials, plant + equipment short of supply. Two-thirds of our industry contacts expects capapcity to become constrained again for trade (sub-contractor) resources. This is a view we share, as we believe that market activity, based on our current level of pre-construction services demand, will return firmly towards the end of 2021.

Building costs inflation in Boston stood at 4.8% in 2020, according to ENR figures, due mainly to a 5.6% increase in the skilled labor index (chart 47,48). The common labor cost index for Boston recorded a much lower increase of 1.1% in 2020.

Material cost increase averaged 2.7% in 2020, but this masks the sharp increase in prices of some materials that we have seen in the final months of 2020. The building materials index recorded a 6.5% year-on-year increase on the back of sharp rises in the price of lumber, PVC piping and copper-related materials.

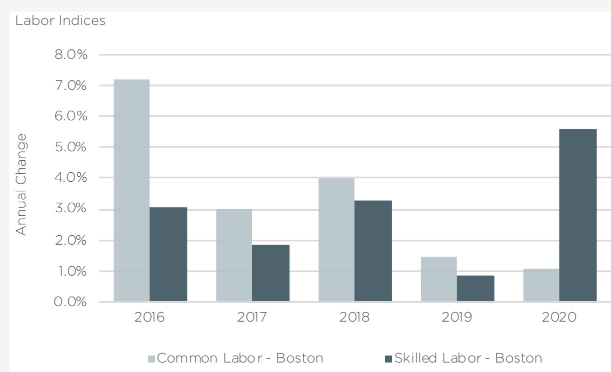
Covid-19 related costs, including decreased productivity from spatial distancing, longer schedules, increased H&S procedural costs caused a significant increase in construction input costs, with some of our industry contracts reporting a 7-8% cist increase in overheads.

CHART 47: BOSTON BUILDING COST INDEX



Source: ENR

CHART 48: BOSTON LABOR COST INDEX



Source: ENR

Bid Submission Prices

Lower starts, work stoppages and subdued pre-construction work accelerated the downward trend in the flow of work in 2020. This has led to increasing competition among contractors to secure work, with clients seeking to put pressure on the construction supply chain to negotiate prices. The pace of bid submission price escalation slowed significantly, with prices stalling and even falling moderately in some sectors in the second half of this year, as contractors cut margins and capacity constraints previously seen in the market eased.

Increased competition and the ease in capacity constraints put downward pressure on profit margins. At the same time, increased input cost from labor, building materials and higher operating costs due to partially Covid-related H&S measures put a floor on any bid submission price decreases.

Already at the end of 2020 we have witnessed a large increase in building material costs in the local market driven in parts by higher copper and plastics prices, which is impacting MEP costs in particular. We estimate that bid submission price inflation averaged 2% over the whole of last year due to the momentum in prices at the start of the 2020.

Looking ahead, our central forecast scenario foresees bid submission price escalation to remain moderate in the near term. Prices are likely to hover around current levels in the first half of 2021, before the increase in pre-construction work seen already at the end of 2020 will increase work on site and put moderate pressure on prices during the latter half of 2021 (chart 49).

The increasing number of projects in the design and permitting phases is likely to increase bid activity over the course of 2021, though we expect that not all of these projects make it off the drawing board or will be pushed back due to uncertain demand dynamics, until signs of a sustained market recovery emerge.

As in other locations, we expect a high variability in bid prices among both contractors and sectors, depending on the exposure and resilience to the current crisis.

We can imagine a scenario where clients are keen to profit from more stable prices near term, with a large number of projects being called for tender in the latter half of 2021 for an early 2022 start on site. This could put renewed inflationary pressure on the market already in late 2021, earlier than currently considered in our baseline scenario. In this case a sudden spike in demand for trade resources would cause a jump in cost escalation.

Our central scenario is based on the following assumptions:

» Projects planned to start in the second half of 2020 were pushed to the first half of 2021.

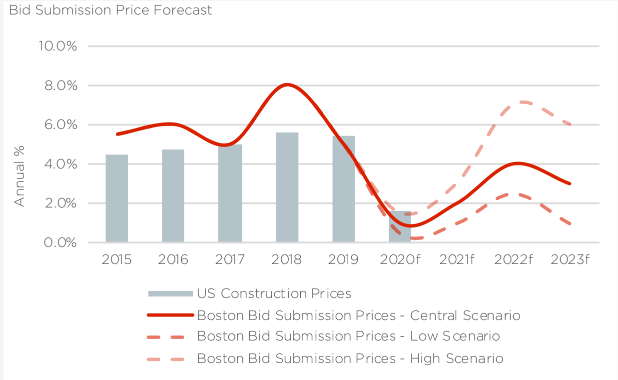
» An increase in pre-construction work will start to fill contractor order books in the second half of 2021. Not all projects will make it immediately off the drawing board as clients will continue to assess their budgets and funding availability in light of continued uncertainty over the demand outlook.

» Contractors keen to fill their order books means clients will be able to source at more competitive prices.

» A turning market is increasing bid price variability in 2021.

» A quicker than expected recovery in project starts could cause capacity constraints to return to the market from 2021, causing a renewed spike in bid price inflation.

CHART 49: BOSTON BID SUBMISSION PRICE FORCAST



Source: Dharam Consulting

WASHINGTON D.C.
MARKET OVERVIEW

City Economy

During the March 2020 shutdown of non-essential businesses, commercial and residential construction, as well as infrastructure work were deemed essential and could continue to operate. D.C. has been in Phase Two of reopening since June, but a spike in coronavirus cases forced authorities to implement new restrictions. Construction appears not to be impacted beyond the H&S measures and spatial distancing rules implemented throughout the year.

The pandemic recession caused sudden and deep job losses, but compared to other metropolitan job markets with similar strict lockdown measures, D.C. performed better. 235,600 jobs were reportedly lost between January and April 2020, the vast majority of this (50%) in the leisure + hospitality industries. Total employment in November 2020 was down 4.1% compared to levels at the start of the year. One reason cited for the relatively better performance is that the region's workforce, whom are in professional + business services as well as governmental sectors, may be better suited to work from home, which enabled companies and institutions to preserve core functions and business continuity. Jobs started to recover in summer 2020, but are nowhere near levels seen before the pandemic.

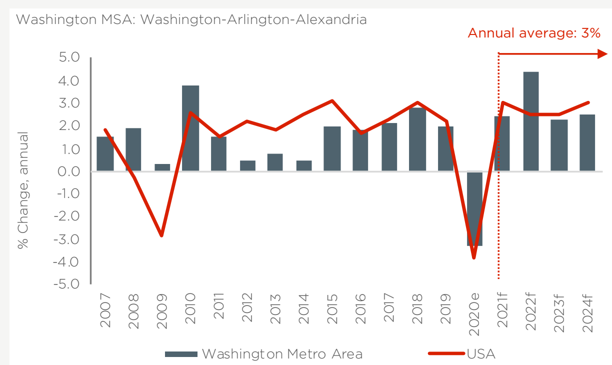
Concerns about the second wave of the pandemic has kept the pace of economic recovery modest in late 2020, a trend that will continue in the first months of 2021. In addition to the pandemic-induced recession, the Washington region has also faced disruptions pertaining to changes in the federal government associated with the 2020 presidential elections and the imminent change in Office. While the disruptions from the federal election have by now largely subsided, the now (what appears annual) threat to a government shutdown in December/January continues to weigh on the Capital and its federal workforce. Whilst short shutdowns typically have little impact on the wider economy, a longer pause does cause a longer threat on public services and economic activity in the region.

The Fuller Institute forecasts the D.C. economy to see a solid recovery in 2021, with activity accelerating in the first half of the year due to a release in pent-up demand and a pick-up in consumer and business spending buoyed by expectations of a successful vaccine roll-out. Activity is forecast to accelerate in 2022 on expectations that businesses and households catch-up with foregone spending in investment of the preceding two years (chart 50). Employment levels are expected to take until the end of 2022 to recover all of the losses of 2020.

Construction activity

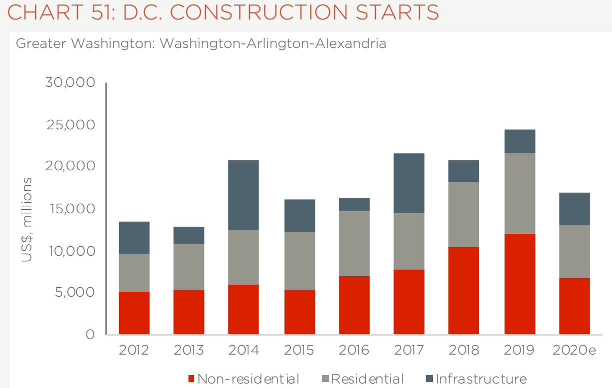
Construction starts declined significantly in 2020 compared to 2019 peak levels, totalling an estimated $17bn ($24.4bn in 2019, chart 51). Whilst much of this decline was expected, the pandemic-related recession added to the decline, with clients adopting a wait-and-see strategy during much of the year. Commercial offices and the multi-residential starts slowed most, after a very strong 2019, again, this was expected.

CHART 50: D.C. ECONOMIC FORECAST



Source: BEA, IMF, The Stephen S. Fuller Institute

CHART 51: D.C. CONSTRUCTION STARTS



Source: ENR, Dodge Data, Dharam Consulting

Within the non-residential sector, light industrial performed well, with increased investment in distribution and data center projects. For example, the $306 million Aligned Energy Data Center (Building II) in Ashburn VA. Amazon Inc. and two buildings each worth $240m associated with the HQ2 project in Arlington VA broke ground in 2020. Unsurprisingly there were few hospitably + leisure related project starts.

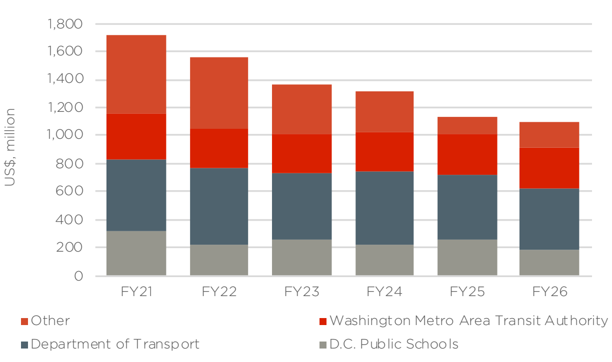
Residential starts totalled an estimated $6bn in 2020, more than a third lower than levels seen in 2019, but in line with the average seen over the past 5-7 years. The single-residential market held broadly stable, but there were fewer multi-residential starts. Notable exceptions were the Ripley II in Silver Spring MD and Storey Park mixed-use residential building in Washington D.C., both with an estimated project value of $150m. Encouragingly, D.C. is also moving forward with another mixed-use residential project on the st. Elizabeth East campus, with Neighborhood Development Co. awarded a contract to build a 421-unit apartment project with commercial space on the Southeast D.C. campus.

Infrastructure projects continued increase in 2020, with higher investment in roads and bridges and energy-efficiency retrofit programs driving the majority of project starts.

Washington, D.C.'s construction industry has been very active in recent years, not only driven by public institutional (GSA) building work but also due to increased investment in commercial space with demand driven by technology, life sciences, and cybersecurity among other sectors. The local industry has also been doing better than most since the onset of the pandemic. We saw construction activity on site busy in 2020, despite the pandemic, as sites largely stayed open (with no exceptions) and contractors adjusting to new H&S and spatial distancing measures. Record levels of project starts in 2019 has and is likely to keep the industry busy in the near to medium term.

Reflecting the active market, employment after an initial contained pandemic dip, increased throughout the year. The industry added 8,600 jobs between January and November 2020.

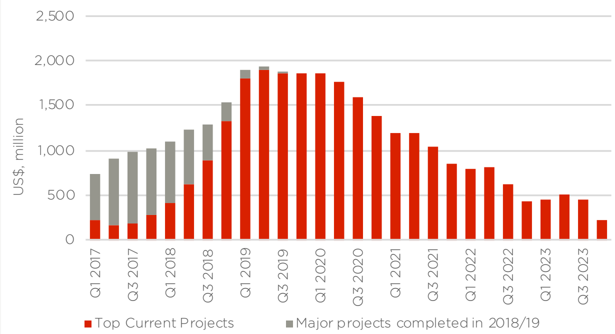
CHART 52: D.C. CAPITAL SPENDING ALLOCATIONS



Source: CFO D.C.

CHART 53: ESTIMATED CONSTRUCTION CASHFLOW

(MAJOR PROJECTS FOR WHICH THE CONSTRUCTION VALUE IS CURRENTLY KNOWN)



Source: Bisnow, BLDUP, Dharam Consulting

Current Pipeline

To assess the state of the construction procurement market and future pipeline, the impact on trade resources and cost inflation, we have analyzed the currently known project pipeline in the Washington D.C. market.

On the public sector side, the FY 2021 – FY 2026 Capital Improvements Plan (CIP) sets out investment of $8.2bn in public social and transportation infrastructure. This is in line with previous year spending allocations. Transport (57%, $4.7bn) is allocated the most capital, including projects for both the Department of Transport and the Washington Metro Area Transit Authority (chart 52). Public schools are allocated $1.46bn, or 18% of the FY21-26 CIP, as D.C. continues undertaking a comprehensive schools modernization initiative that began in 2008.

Our current large private projects pipeline contains more than 70 active projects, though this includes a number of projects which were completed in the second half of 2020.

The estimated combined projects cashflow is shown in chart 53. Activity has been firm in 2019 and 2020, but not unusually high for the local market and at a level contractors can comfortably deliver with regionally available resources. Activity is now expected to decline to a more moderate level in 2021 and the first half of 2022, due to the substantially lower commercial and multi-residential construction starts seen in 2020. We expect an uptick in education, healthcare, and light manufacturing project starts in 2021, which will feed into stronger work on site in 2022.

We expect a stronger strengthening in the market from 2022, with the start of multiple large projects. There are significant schemes in the longer-term pipeline, such as the Smithsonian Campus master plan and Poplar Point, which will, if they proceeded, have a significant impact on the local market.

Supply Chain Capacity and local input cost

Resource availability within the local construction supply chain has been mixed in recent years. The labor pool is relatively large regionally, but the large amount of work started and delivered not only in D.C. but the wider area, has put pressure on resources. In 2019 and early 2020 we have seen instances where increased resource requirements for specialist trades has squeezed capacity and driven up sub-contractor pricing.

The decrease in the construction pipeline is set to release capacity onto the market and we expect decreased pressure on bid submission price escalation in the medium term.

We expect labor cost increases in D.C. to be modestly higher than the national average in 2020, as activity largely continued and the jobs market expanded. Nationally, the ENR skilled labor cost index was up 1.6% in 2020, while common labor cost increased by 1%. Prevailing wage rates for specific trades are shown in chart 54. The rate of wage + fringe increases between 2019 and 2020 has varied significantly, ranging from no change for common laborers to 7% for bricklayers. Building material prices are estimated to be slightly higher in the region than the national average, but price increases are seen in line with the wider market. Whilst price increases were modest at the start of 2020, supply chain disruptions and increasing demand has put significant upward pressure on materials in the final months of 2020, a trend that we see continuing at the start of 2021.

Bid submission prices

Annual price escalation stood at 5% both in 2018 and 2019 on the back of an increased level of project starts in the region. Whilst these projects kept the industry busy in 2020, the drop in starts, which had largely been expected, is expected to make the industry more competitive in the short to medium term. Bid submission prices are estimated to have increased by 2% overall in 2020, with the momentum in prices at the start of the year offsetting softer market conditions as the year went on.

Price escalation is forecast to slow to just 1% in 2021, reflecting a market adjustment in the first half of the year. We see an increase in competition for resources in the latter part of the year and maintain our forecast that bid submission price escalation in Washington D.C. will continue to show year-on-year increases over the next three years. Price escalation will revert to levels seen in this historically stable market, with bid submission prices expected to average 3% in 2022 and 2023 (chart 55). This is based on the following assumptions:

» Uncertainty over economic outlook impacts investor confidence and slows the pace of construction nationally, which may impact the regional market.

» Construction work in the D.C. area has been strong in recent years, but the market is not overly busy.

» Near term slowdown in work due to lower project starts in 2020 releases capacity in the market

» A number of large projects are in longer-term planning but these are not expected to impact the market in the next three years.

» Material prices are seeing upward pressure.

Our view: Low construction starts in 2020 will see the pipeline of activity projects decline in the near to medium term, which will continue to moderate bid submission price inflation, as market capacity continues to balance. We forecast construction price increases of around 1% in 2021. On the back of a rebound in starts, price escalation is forecast to increase an average of 3% per annum from 2022.

CHART 54: D.C. PREVAILING WAGES

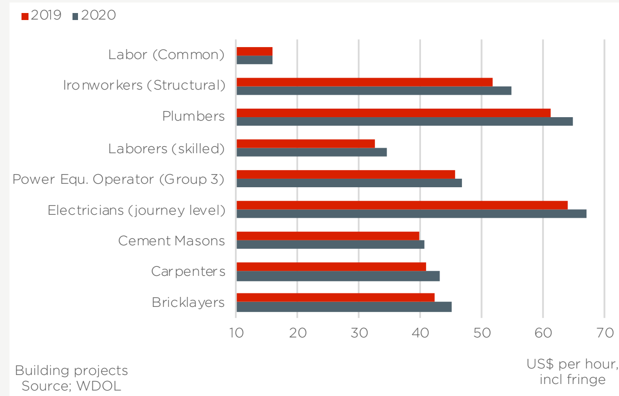
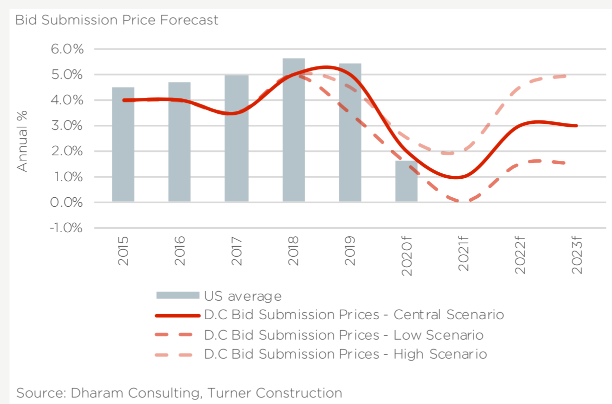


CHART 55: D.C. BID SUBMISSTION PRICE FORECAST



Washington D.C.

CHICAGO

MARKET OVERVIEW

Economic Backdrop

Even before the start of the pandemic, economic growth in Chicago had cooled more than in other large population centers. Employment growth had slowed or abated in most industries. After the initial sharp contraction in employment, job levels partially recovered in the metro area, though the pace appears to lag the national averages. Job numbers were down 6.3% in the year-to-October 2020, compared to a decrease of 5.7%, nationally. Positively, business activity has picked up since the summer and remains in positive territory (chart 56).

Construction activity + Work Pipeline

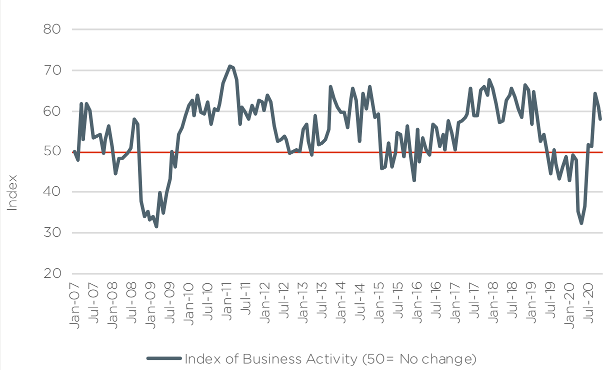
Construction had been deemed essential infrastructure in Chicago and as such the industry was exempt from stay-at-home orders during the first lockdown. Most projects continued once social distancing and new H&S procedures were in place. Civil disturbances caused temporary work stoppages in summer, but work is largely back on track. Given the uncertain outlook over future demand conditions, the supply chain adjusted and a number of high-profile projects were put on hold, with the Covid -19 pandemic and funding reviews cited as the main reasons for project stops. Nevertheless, the local market fared better than many others. A number of large commercial and residential projects are being continued, which has kept the supply chain busy in 2020.

Employment in the sector did not see the sharp drops as elsewhere in the nation. After an initial decrease (5% between January to April 2020), employment overall rose 11.6% in October compared to January 2020.

The value of of project starts is estimated to have declined by 17% to $15.7bn in 2020, compared to $18.95bn in 2019 (chart 57). Much of this decline was expected before the pandemic hit. The non-residential sector is expected to see the largest drop this year, falling from $8.36bn in 2019 to $6.57bn in 2020, due to weak commercial, and hospitality + leisure project starts. There were also fewer healthcare and education projects. In contrast, the industrial sector proved a bright spot in 2020, driven by increased warehousing and distribution projects. The residential sector is estimated to have decreased by 10%, though we generally continue to see heightened demand for residential space in the city. Further major developments are in the pipeline, in particular in the South Loop, the North Branch corridor and across Downtown. The value of infrastructure projects is expected to remain firm at around $4 billion this year, led by continued investment in roads and highways projects for large-scale masterplan developments, as well as the roll out of the airport expansion project, which we see continuing albeit at a perhaps slower pace.

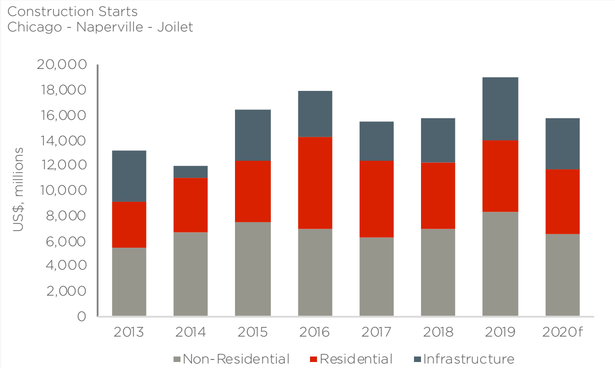
Construction starts are forecast to rise by 3% in 2021, to $10.8bn, led by a 19% increase in residential starts. Subdued commercial (offices), hospitality + leisure construction will cause an overall 7% decline in non-residential starts, which is expected to be partially offset by a recovery in in healthcare and education projects.

CHART 56: CHICAGO BUSINESS ACTIVITY



Source: ISM

CHART 57: CHICAGO CONSTRUCTION STARTS



Source: ENR, Dodge Data

Reflecting a decrease in the value of construction starts and temporary project halts, the development pipeline was moderate in 2020. Coupled with work halted during the year, we have seen a significant slowing of activity on site.

Workflow started to ease in Q2 2020, as a number of major projects progressed towards completion (chart 58).

These projects have drawn up significant resources over the past 24 months, contributing to the price rises in 2018/19, in particular for MEP and fit-out contractors.

Order books will start to fill up over the course of 2021, benefiting from pent-up demand in the healthcare, warehousing + distribution, education and residential sectors, which will restart the development cycle. Commercial work is expected to take until 2022 before a meaningful recovery will take place. There are significant schemes in the longer-term pipeline, such as the already mentioned The 78, and O'Hare airport redevelopment, which will have a significant impact on the local market, though their long time frame should limit the pressure on trade resource demand.

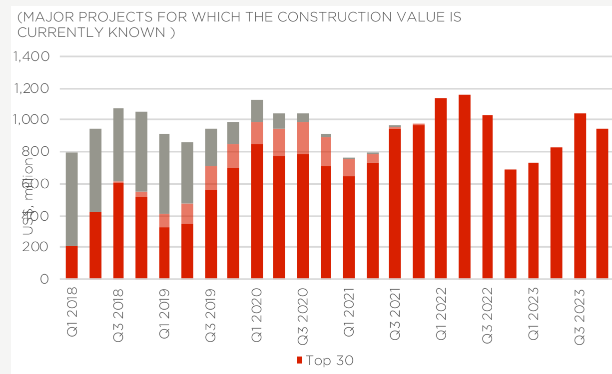
Local market capacity + Input Costs

Construction costs in Chicago remain amongst the highest in the country. Building input cost inflation was up 3.0% in 2020 (chart 59). Supply chain capacity had tightening significantly since 2017, especially on projects such as very tall high-rise buildings where complexity and scale leads to a smaller available pool of expertise. More recently, the wider industry slowdown has made the local bidding environment more competitive, with more sub-contractors chasing work to maintain their workload. This is giving clients more choice during the bidding process with more competitive bid returns being achieved than only a year ago.

Labor cost inflation remained much higher in Chicago in 2020 than the national average. Common labor recorded a 3.2% increase in 2020, while skilled labor costs were up 3% (chart 60).

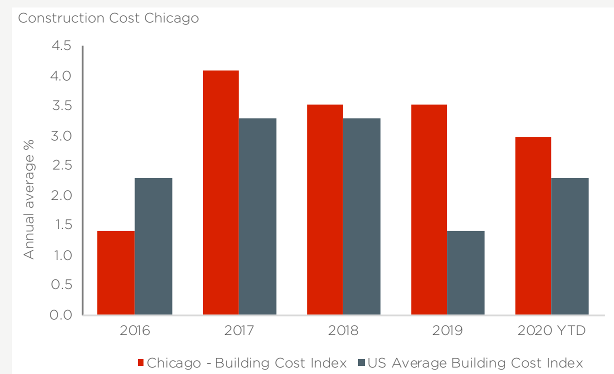
Union labor dominates the local industry and the current prevailing wage rates for specific trades are shown in chart 61. There are varying degrees of labor capacity availability in the region, where a limited pool of specific skilled labor can cause significantly cost escalation for some trades. However, in light of recent market developments we have seen a more balanced industry capacity for specific trades and bidding has become more competitive. The ENR recorded material price inflation of 2.6% so far in 2020 in Chicago, lower than the national average of 3.9%.

CHART 58: CHICAGO ESTIMATED PROJECT CASHFLOW



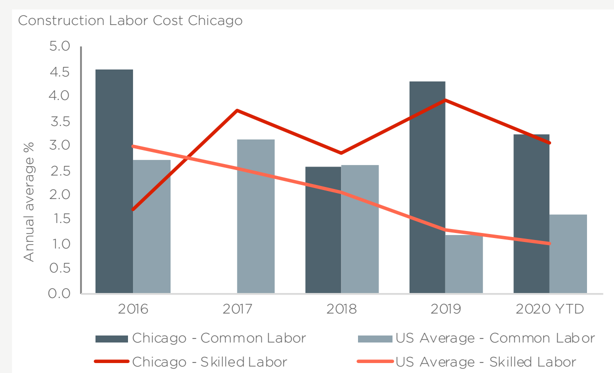
Source: Crains Detroit, BLDUP, Dharam Consulting

CHART 59: CHICAGO BUILDING COST INDEX



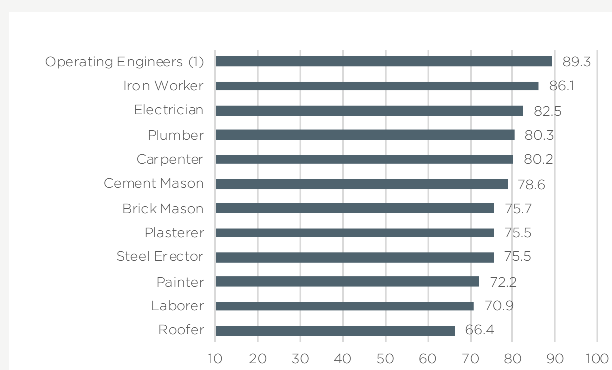
Source: ENR,

CHART 60: CHICAGO LABOR COST INDEX



Source: ENR,

CHART 61: CHICAGO PREVAILING WAGES



Source; Chicago, Cook County

Chicago

Bid Submission Prices

Our analysis of bid submission prices in Chicago shows that price escalation was higher than the national average over the past two years, with prices estimated to have increased by 6.5% and 5.4% on average in 2018 and 2019, respectively. This was the largest annual increase over the past decade and a reflection of tighter resource capacity in the local market.

In line with the national picture, the momentum in pricing stalled in Q2 2020 and bid submission prices levelled off over the course of the year. For 2020 as a whole and the first half of 2021 we do not foresee major changes in prices compared to current levels. This is based on the view that construction in Chicago largely continued through the current economic crisis with only a number of projects put on hold so far.

Should we see a longer period of subdued economic activity with no signs of a recovery, we expect that an increasing number of projects may come under review. In the subsequent two years (2022 and 2023) we expect a moderate uptick in bid submission price inflation (chart 62). If project starts in 2021 rebound stronger than we currently anticipate, this could lead to a spike in cost escalation next year, as the supply chain may not be able to react fast enough to increasing volumes. Our central scenarios is based on the following assumptions:

» Pipeline work is now estimated to have peaked in Q1 2020

» Projects planned to commence in summer/ fall 2020 were reconsidered in light of potential changes in demand, as clients adopted a wait-and-see approach. We expect these projects to commence over the course of 2021 once a broader recovery takes hold.

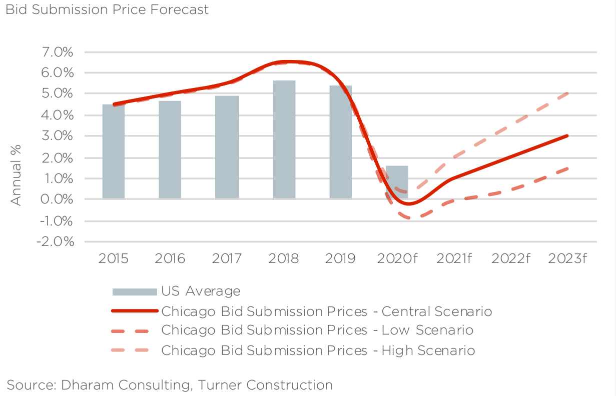
» Contractors keen to fill their order books means clients will be able to source at competitive prices.

» Market capacity for labor and materials balanced in 2020 and 2021, but a quick turn in the market at the beginning of 2022 could put pressure on capacity.

» Industry capacity can be mostly retained.

There are significant risks to future demand levels including a prolonged economic downturn and slow recovery, elevated construction costs, as well as uncertainty over domestic policy decisions of the new US Administration. On the positive side, we see continued investor interest in the local Chicago market and favorable decisions by the city to allow large projects to go ahead.

CHART 62: CHICAGO BID SUBMISSION PRICE FORCAST



Source: Dharam Consulting, Turner Construction

Our view: The Covid-19 related economic fall-out had an immediate impact on the Chicago construction sector, its supply chain and business cash flows. Consequently, bid submission prices have become a lot more competitive, with an increasing number of (sub) contractors aggressively bidding for work, putting down-ward pressure on construction inflation. Disruptions in the supply chain, material price increases and trade labor shortages have and will put a floor on the downward pressure on prices.

There are significant risks to future demand levels including a prolonged economic downturn and slow recovery, elevated construction costs, as well as uncertainty over domestic policy decisions of the new US Administration. On the positive side, we see continued investor interest in the local Chicago market and favorable decisions by the city to allow large projects to go ahead.

SAN FRANCISCO
MARKET OVERVIEW

City Economy

Prior to the pandemic recession, the San Francisco metro area outperformed, with the economy benefiting from a skilled workforce, venture capital eager to invest, capacity for innovation and entrepreneurial support. Tech, biotech and other fast growth sectors supported job creation and wage growth. Housing affordability was seen as the main limit to further expansion.

The early stages of the pandemic put a sudden stop to growth, as the first strict shelter-in-place orders in March shut down vast swaths of the economy with ensuing job losses. A partial re-opening saw the job market recover, albeit at a slower pace than other metropolitan areas (chart 63). Restrictions were tightened again in November. The slower recovery was partially due to the more cautious reopening pace and continued restrictions on (international) visitors, tourism and hospitality.

Continued weakness in the leisure and hospitality market is expected to hamper the economic recovery in 2021, with UCLA's forecast predicting that jobs will only reach pre-crisis levels in 2022 (+1.3% in 2021, +3.5% in 2022).

Construction Activity

Stay-at-home mandates at the end of March 2020 ordered most construction sites to shut down, except healthcare projects related to the pandemic, and residential and mixed-use projects that have at least 10% of affordable units. Public works construction was limited to essential projects as determined by officials.

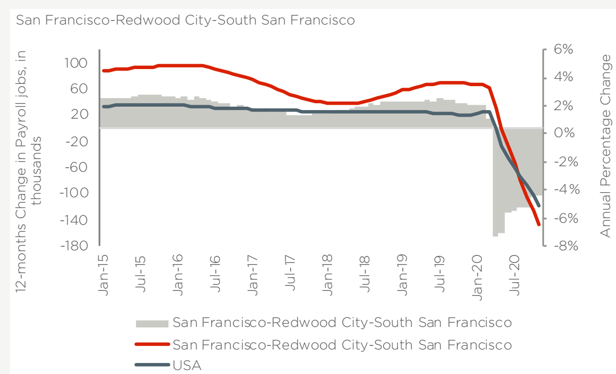
San Francisco has a significant number of residential projects under construction that have a large enough affordable component, which meant that they proceeded on site. Many commercial, education, non-essential infrastructure projects – an estimated 50-60% of active work-on-site stopped.

Construction was allowed to resume at the beginning of May. During the second wave lockdown at the end of 2020, construction projects may continue if all work follows required safety protocols. This includes public buildings and in-frastructure, commercial, residential, and mixed-use projects, as well as maintenance and renovation work.

The flow of construction permits has slowly increased since April and activity has picked up. This reflects the revival of projects that were already on site when the shutdown order hit. In contrast, new projects have struggled to break ground. Funding issues have become more apparent, as high construction cost are now being met by an uncertain demand outlook, which has led to some projects being stalled and reviewed. Some projects that were meant to start this year have been postponed and are now expected to break ground in 2021, and no definite dates have been announced.

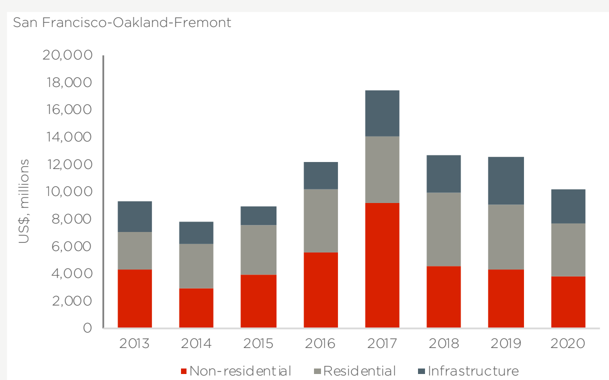
We estimate that the value of starts dropped by nearly 20% this year (chart 64). Retail, commercial offices, hospitality + leisure project starts were unsurprisingly low.

CHART 63: SAN FRANCISCO EMPLOYMENT TRENDS



Source: BEA, Dharam Consulting

CHART 64: SF CONSTRUCTION STARTS



Source: ENR, Dodge Data

Education starts were also cut back, as institutions, hit by revenue losses, are reviewing their capital spending programs and space needs. Construction on site had started to slow in 2019, but this came on the back of a sharp rise in work in the preceding years. Fewer starts this year will inevitably translate into lower work on site in at least 2021.

Current Pipeline

Our estimation of construction cash flows based on our major projects pipeline of known projects in San Francisco is shown in chart 65. Workload slowed in 2019 by an estimated 5%. Given high construction inflation this translated into flat construction volumes at best in 2019. A further weakening was expected in 2020, which unsurprisingly was worsened by the Covid-19 pandemic, which halted work on site and put project starts on hold. We expect the backlog of work to remain subdued throughout most of 2021.

Beyond 2021, we expect some of the mega projects that have been in the long-term development pipeline to finally get underway. Housing shortages are still prevalent in the market and the slower delivery of units in 2020 and 2021 is set to keep the pressure on the residential market. These masterplan developments include Hunters Point Shipyard, Treasure Island, Mission Rock, Parkmerced, Pier 70 and the Schlage Lock site.

Hunters Points has been delayed even before the pandemic and the construction schedule is yet to be defined. Infrastructure work has started on Pier 70, but building projects have yet to commence. Treasure Island is slowly moving ahead with individual residential buildings. Parcmerced and Schlage Lock are expected to finally break ground on building construction in early 2022.

More projects are expected to enter the development pipeline in 2022, at which point backlogs will increase.

Local Building Cost and Supply Chain Capacity

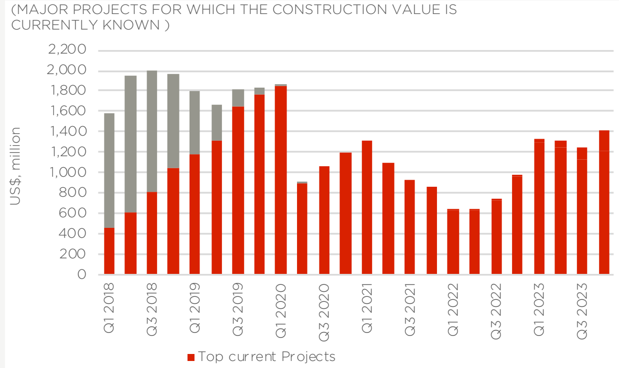
Local building costs in 2020 were 30% higher than the national average, due to significantly higher labor cost. Building cost inflation in San Francisco spiked in 2020, according to ENR figures, rising by 7.2% year-on-year, as material prices surged (chart 66). Labor costs are high, but did not see any major prices changes in 2020, according to the official figures. Some pay rises to union trades kicked in in 2020, but these were measured. Further small rises are due in 2021 (chart 67).

Contractor and sub-contractor capacity constraints have eased and resource availability in the local supply chain has become more balanced already towards the end of 2019. There are still some shortages of key trade labor.

Construction employment plunged by nearly 30% between January and April. Since then, the restart of projects has seen jobs return, but overall sector employment in November 2020 was still 6.4% lower than at the start of the year (chart 68).

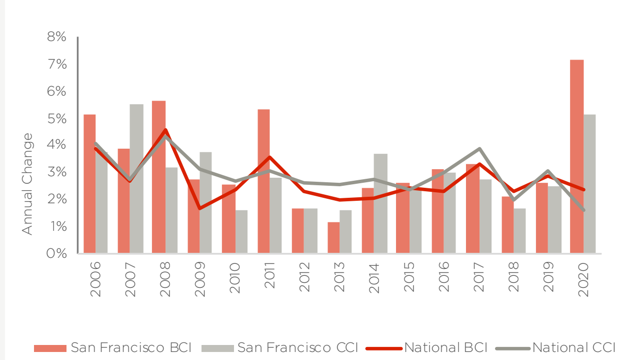
In contrast to labor, the market has seen significant supply disruptions on the materials side, which have caused lead times to lengthens and prices to surge in 2020. ENR reports that materials prices on average were up 17.9% in 2020. We have seen a shortage of MEP material supply, as well as for wood framing.

CHART 65: SF ESTIMATED PROJECT CASHFLOW



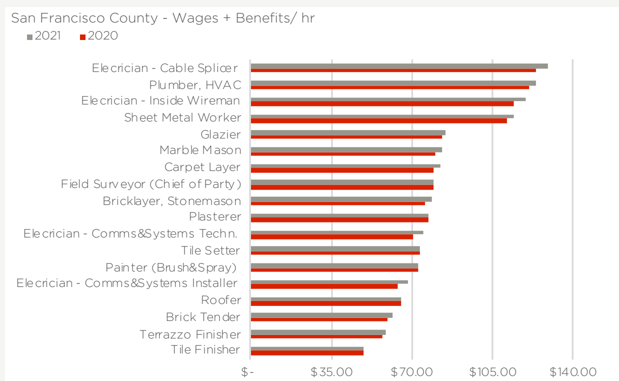
Source: Crains Detroit, BLDUP, Dharam Consulting

CHART 66: SF BUILDING (INPUT) COST INFLATION



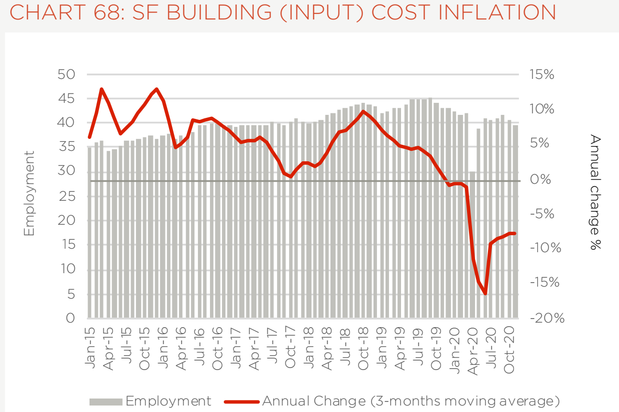
Source: ENR

CHART 67: SF BUILDING (INPUT) COST INFLATION



Source City and County of San Francsico

CHART 68: SF BUILDING (INPUT) COST INFLATION



Source: BLS

Bid submission prices

Annual bid submission price escalation in San Francisco had started to slow in 2019, but was escalation rates remain above the national average.

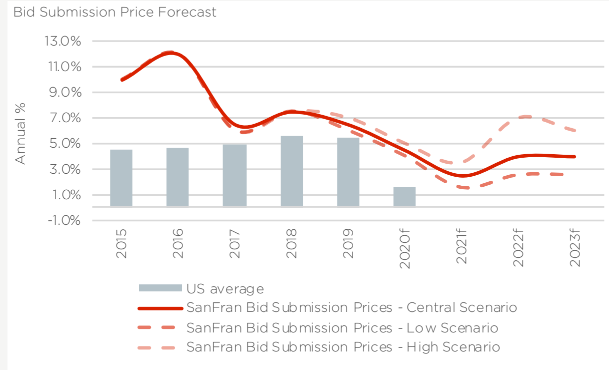
Contractor bid submission prices in San Francisco are estimated to have increased by 4.5% in 2020, despite the slowdown in workload and lower overheads & profits, due to input cost pass-through. More specifically, rising material costs have fed through.

Whilst we do not expect major price pressure from labor and also anticipate a further squeeze in margin given increased competition within the supply chain, higher materials costs will keep a floor on construction price.

Our central scenario foresees bid submission prices to increase by 2.5% in 2020, before a return of stronger demand conditions pushes price inflation up to 3-4% in 2022 and 2023 (chart 69).

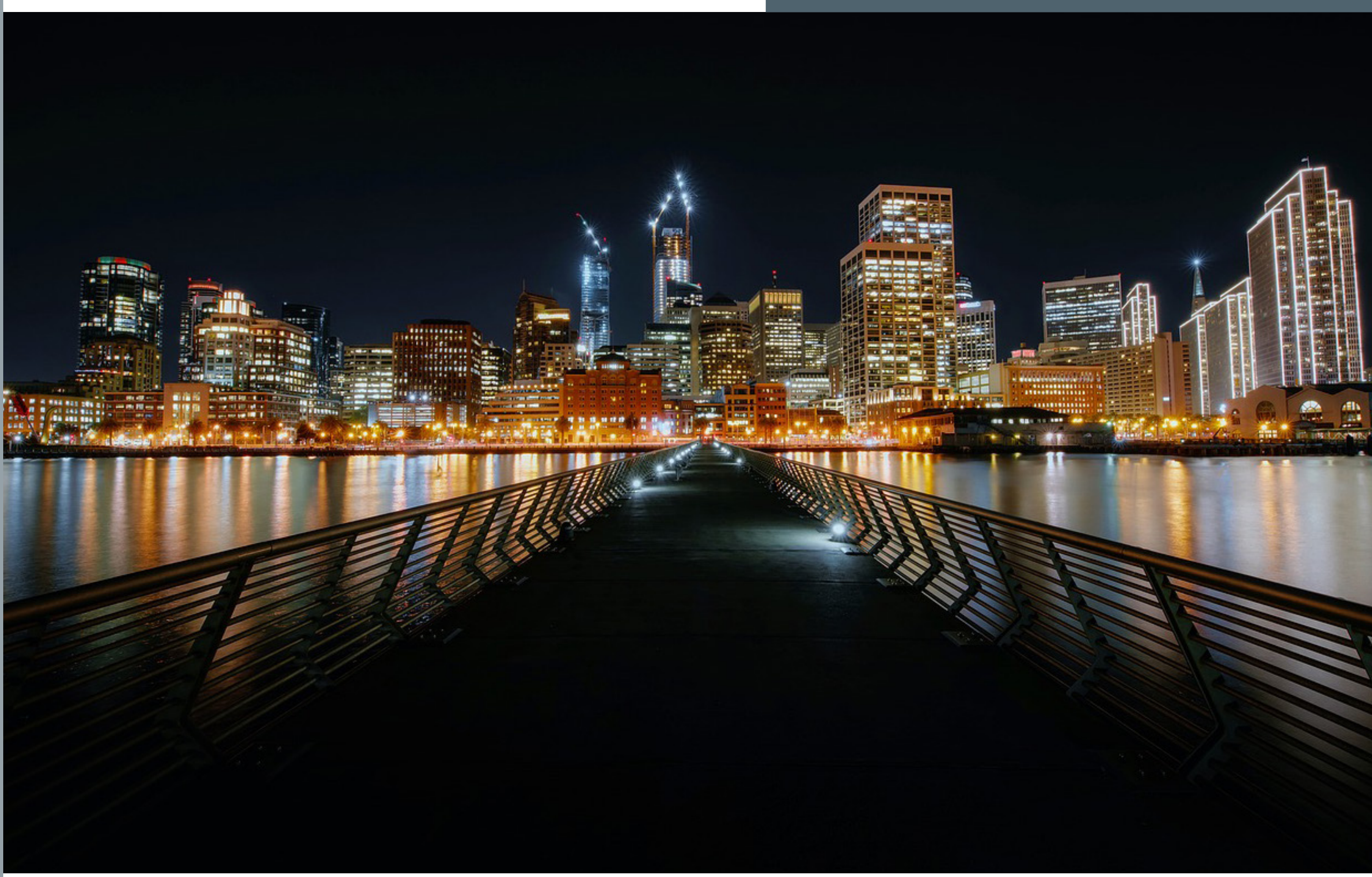
We expect bid price volatility to be high in these market conditions, with competition higher in some sectors than others. Large, complicated schemes, demanding specialist labor and experienced contractors are likely to command higher prices, despite subdued demand overall.

CHART 69: SF BID SUBMISSION PRICE FORECAST



Source: Dharam Consulting, Turner Construction

Our view: Pipeline work has moderated, taking pause for breath in what has been a very active construction market in the past years. Beyond 2021, we expect some of the mega projects that have been in the long-term development pipeline to finally get underway, driven by strong residential demand. Bid submission price inflation has slowed, but remains above the national average. We expect bid submission prices to increase by 2.5% in 2020, before a return of stronger demand conditions pushes price inflation up to 3-4% in 2022 and 2023. Bid price volatility is expected to be elevated.



MIAMI I TAMPA
MARKET OVERVIEW

City Economy

The near collapse of the state tourism industry during the March/April pandemic lockdown plunged the Florida economy into a recession and decimated job numbers. However, the Covid-19 recession, while more severe than the Great Recession of 2008/09, also appears short-lived in the state.

Activity started to recover in the 2nd quarter of 2020, led by financial, business and professional services, as well as construction and a resilient housing market, though by the end of the year this was not enough to fully offset the losses sustained in the hospitality, leisure and retail industries. Employment fell by 12.7% and 11.2% in the Miami and Tampa metro areas, respectively between January and April, a smaller decline than in many other metro areas in the nation, as the state lockdown was one of the least restrictive. By November 2020, job losses stood at 4.6% (Miami) and 3.5% (Tampa), respectively compared to the beginning of 2020.

Economic activity is forecast to rebound solidly in 2021 and employment is expected to reach pre-pandemic levels. Overall, the Florida economy is forecast to outpace the recovery of the national market (chart 70).

Florida is becoming increasingly attractive to the financial services industry, with reports that a number of high-profile financial institutions are mulling a move of major business units or even HQ's from New York to the state. Whilst low taxes, lifestyle and cheaper office space have been the main attraction for years, the pandemic and rise of remote working have caused a larger shift, with companies re-evaluating their real estate footprint to save cost. To attract potential investment, the areas has seen increased development of office space.

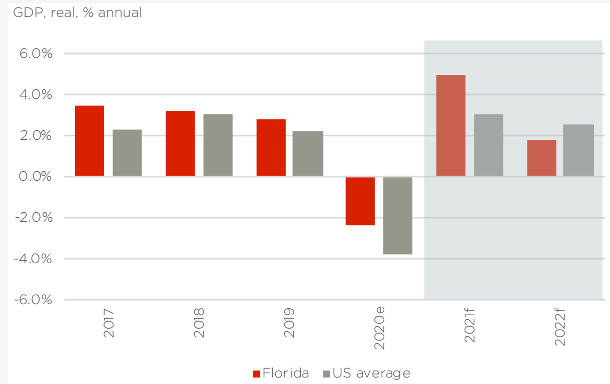
Construction Activity

Construction was exempted from shutdown orders and activity, in both Miami and Tampa, continued to be relatively steady throughout 2020, in particular in the residential and (public) infrastructure sector. Nevertheless, the fallout from the pandemic impacted confidence in some segments of the market and slowed the start of new commercial, retail and hospitality projects.

Dodge estimates that starts in Tampa totalled $9.5bn in 2020, down from a record $10.5bn in 2019, but still a high value for the market (chart 71). The largest sector, residential saw an estimated $5.4bn worth of construction starts, with a rise in single-residential starts ($4.7bn) offsetting more subdued activity in the multi-residential sector ($758m).

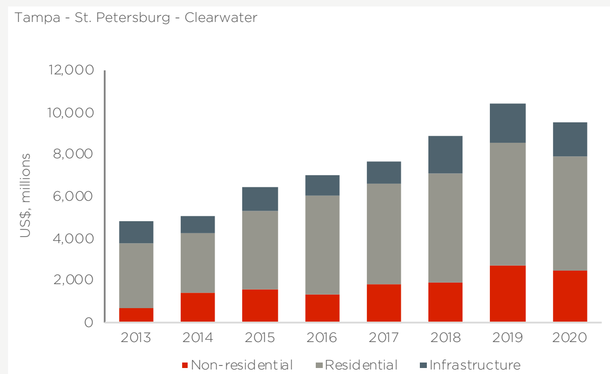
Construction starts in Miami also remained relatively buoyant led by the residential market. Dodge estimates that starts totalled $14.8bn, slightly down from $15bn in 2019. We estimate that the decline was around 10%, as we saw a number of projects planned to start in 2020 moved into 2021, especially on the commercial and multi-residential side (chart 72).

CHART 70: FLORIDA ECONOMIC ACTIVITY



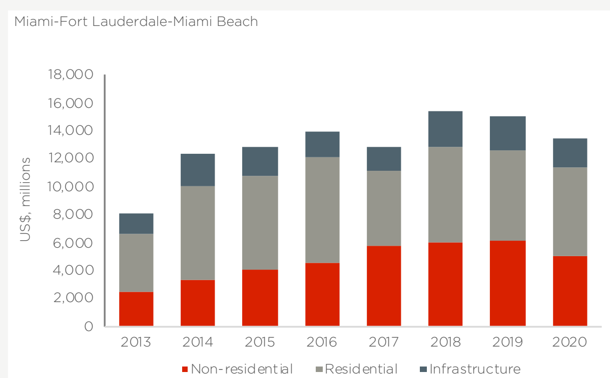
Source: Institute for Economic Forecasting, Federal Reserve

CHART 71: TAMPA CONSTRUCTION STARTS



Source: ENR, Dodge Data

CHART 71: MIAMI CONSTRUCTION STARTS



Source: ENR, Dodge Data, Dharam Consulting

Current Pipeline

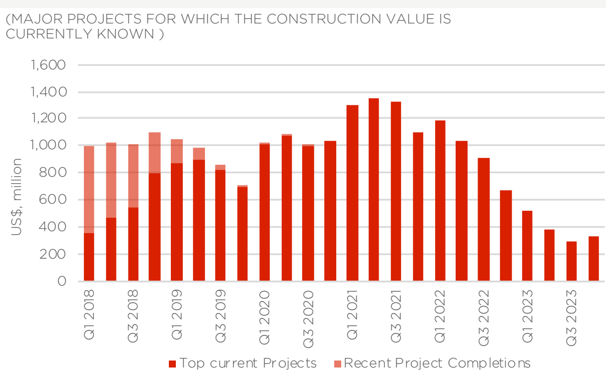
Contractor order books are expected to remain relatively firm in the near to medium term, as activity and new starts are robust. Our estimation of construction cash flows based on our major projects pipeline of known projects in Tampa and Miami are shown in chart 73 and 74. Our estimated pipeline takes only those projects into consideration for which the construction timeframes have been announced. As such, it excludes a significant number of large projects that are being proposed and in some cases are already in pre-construction.

In Miami, construction cashflow slowed in 2019 as a number of very large projects completed construction. On the back of a high number of large project starts in that year, construction cashflow picked up in 2020 and is expected to maintain levels in 2021 and 2022. Despite a generally more cautious outlook for construction nationally, we expect the Miami market to remain strong over the next two years, unless a slower than expected national economic recovery starts to weigh on investor confidence.

If all – or the majority – of projects currently planned are being delivered over the same time horizon, this is likely to test the capacity of the local supply chain, pushing up prices, which have already risen considerably.

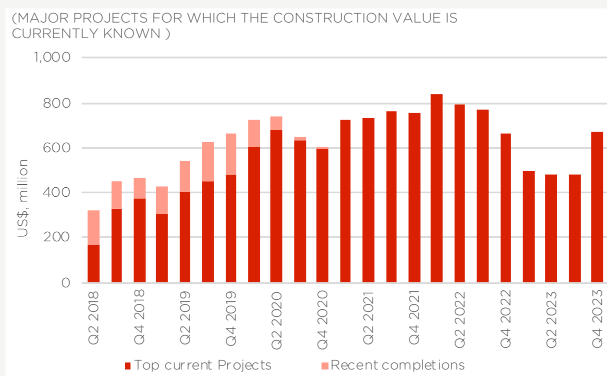
Major new developments are currently under development and more are planned in and around Tampa's downtown area, which will transform the city over the next decade. Tampa's flagship program is the 50-acre, $3 billion Water Street project, which is currently underway along the city's waterfront. Construction cashflow has increased sharply in 2019 with the start of Water Street Tampa, putting significant pressure on the local supply chain and pushing up construction prices. If all projects proceed as planned, construction cashflow is expected to remain high over the next years.

CHART 73: MIAMI ESTIMATED PROJECT CASHFLOW



Source: Dharam Consulting

CHART 74: TAMPA ESTIMATED PROJECT CASHFLOW



Source: Crains Detroit, BLDUP, Dharam Consulting

Local Building Cost and Supply Chain Capacity

Despite the increases of recent years, construction costs in Miami and Tampa remain significantly lower than the national average, due to lower labor cost. According to the ENR, the average building costs in those two locations are around 15% lower than the national average.

Construction labor markets held relatively stable throughout the 2020 crisis year, largely as construction activity was allowed to continue during the pandemic lockdown. Whether the fall in employment levels in Tampa in the final months of 2020 is a temporary blip or signs of a broader weakness remains to be seen, pipeline work so far appears stable. Construction employment in Miami strengthened in the final months of 2020 (chart 75, overleaf).

As construction activity maintains its robust pace, labor shortages remain a primary challenge in both Miami and Tampa, in particular for skilled labor, contractors experienced to work on large-scale construction projects and specialist work.

Competition remains strong for sub-contractor resources. Consequently, we estimate that labor cost inflation, at around 4-5%, has been higher in both Tampa and Miami compared to the national average in 2020.

There is no prevailing wage law under Florida State law and there is no state requirement that Davis-Bacon and Related Acts (DBRA) wages are paid for construction work by the state, counties or cities in Florida. All federal funded public works fall under the DBRA. Individual counties within this state have imposed either their own prevailing wage regulations or chose to implement DBRA such as Miami-Dade County. Current reported prevailing wages in in Miami-Dade and Hillsborough County (Tampa) are shown in chart 76 and 77 (overleaf).

Building materials have experienced the same supply chain bottlenecks seen elsewhere across the nation, impacting prices and lead times.

Bid submission prices

The market in Miami and to a lesser extent Tampa continue to mature, which is expected to soften the extreme construction cycles seen in previous decades, providing for more stable development. Overall, despite the somewhat slower starts in 2020, we expect steady market conditions across all sectors in the near-to medium term.

Average contractor bid price escalation picked up considerably since the start of 2018 to above the national average, on the back of an input cost pass-through and firm overheads & profits. More specifically, firm demand levels, the start of major projects and sub-contractor capacity constraints for specialist trades pushed up prices. We estimate that bid price inflation stood at 3% in 2020, a level which is likely to be maintained in 2021 and 2022 (chart 78).

Our central scenario is based on the following assumptions:

» Significant projects are underway and are in the pipeline. The level of work has increased significantly in 2019 in Tampa and in 2020 in Miami.

» Despite the uncertainty over the national economic outlook, investor confidence is being maintained in the regional market.

» Firm industry activity will maintain competition for contracting and labor resources

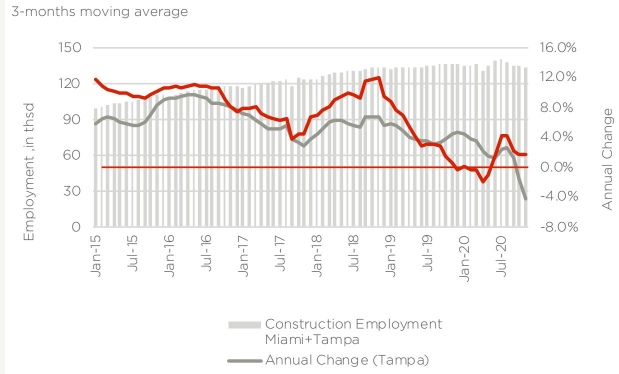
» The passage of amendment 2 in Florida in the 2020 election will raise the minimum wage in Florida to $10 in September 2021 and subsequently by one dollar annually each September until the minimum wage reaches $15 in 2026. This could impact the cost of common construction labor, which is currently below $15 per hour according to the prevailing wage schedule.

» Material prices are seeing upward pressure.

» Large-scale projects, demanding experienced contractors able to deliver mixed-use projects over a longer timeframe are likely to command higher prices. At the same time, smaller projects may face difficulties in attracting sufficiently competitive resources, which may lead to higher average cost.

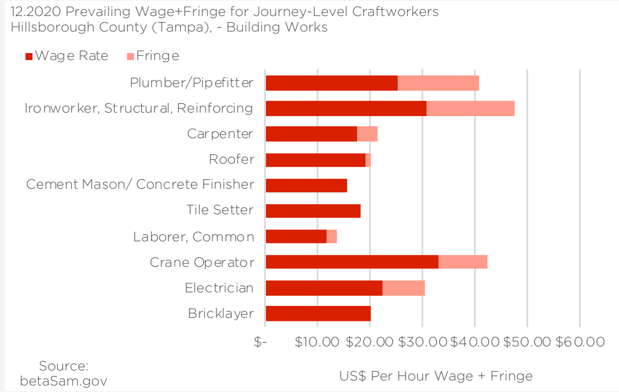
Our view: Construction activity in both Miami and Tampa continued to be relatively steady throughout 2020. Despite a generally more cautious outlook for construction nationally, we expect the Miami market to remain strong over the next two years. Similarly, major developments in Tampa will maintain the local supply chain busy. Labor shortages remain a primary challenge, maintaining competition for sub-contractor resources. We estimate that bid price inflation stood at 3% in 2020, a level which is likely to be maintained in 2021/22.

CHART 75: CONSTRUCTION EMPLOYMENT



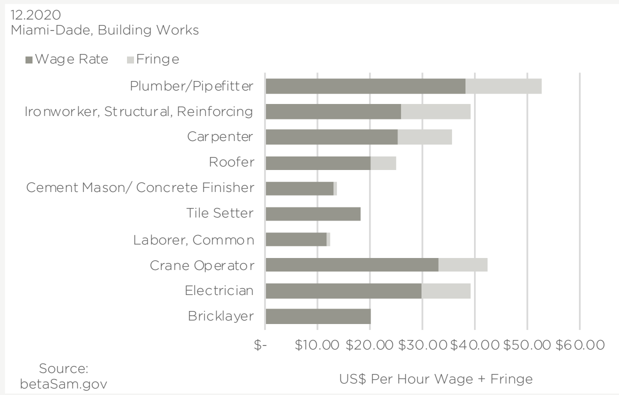
Source: BLS

CHART 76: PREVAILING WAGES TAMPA



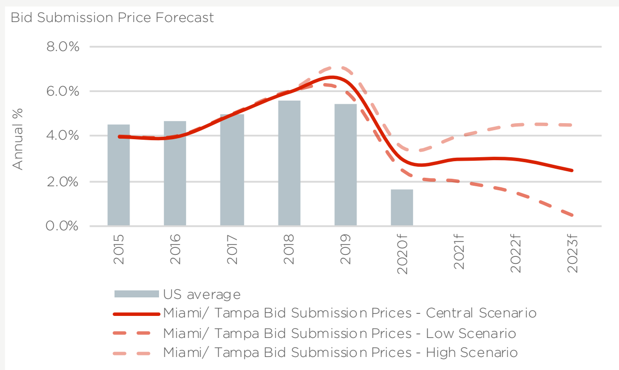
Source: betaSam.gov

CHART 77: PREVAILING WAGES MIAMI



Source: betaSam.gov

CHART 78: MIAMI I TAMPA BID SUBMISSION PRICE FORECAST



Source: Dharam Consulting, Turner Construction

SEATTLE
MARKET OVERVIEW

City Economy

The pandemic has dealt the Seattle economy a heavy blow. During the first stay-at-home order in March 2020, the metro area shed nearly 320,000 jobs (15% of the total). Many jobs were subsequently recovered, but the rebound has been uneven, with some sectors, i.e. tech (Amazon and Microsoft saw a pandemic boom) faring much better than others such as aerospace, tourism, hospitality and retail. Looking ahead, this two-speed economy is likely to remain a trend regionally, which is going to weigh on the overall recovery. Consequently, whilst King County's Office of Economic and Financial Analysis forecasts that employment will rise over the next years, it will take until 2022 for job levels to return to pre-pandemic levels.

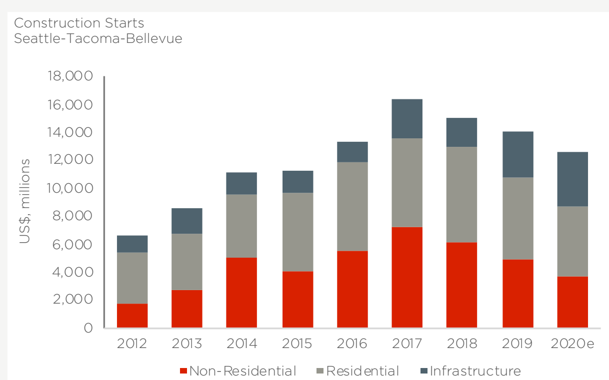
Construction Activity

Commercial and residential construction was not authorized to continue activity on site during the first lockdown orders issued on 23 March, 2020. In contrast, other work was deemed essential and was allowed to proceed. On April 24, low risk construction projects were allowed to resume, if contractors put in place certain safety benchmarks. Only in June was full activity allowed to resume and new construction work was allowed to commence.

Consequently, construction starts dropped off sharply in the first half of 2020 and the supply chain cut jobs across the board. Total starts in 2020 are estimated to have decreased by 10% to $12.6bn in 2020 (chart 79). Commercial, including retail, offices and hospitality project starts saw the largest drop on the non-residential side. In contrast, the warehousing and logistics sector had a strong year, though this sector remains relatively small compared to the overall market. Education, healthcare and public building starts slowed, as project owners were either allocating resources to the immediate pandemic response or started to re-assess their capital programs in light of potential demand changes. Multi-residential project starts took a while to recover after the initial shutdown during which work was not allowed to continue or commence. Infrastructure projects, deemed essential, continued and remained relatively strong throughout the year. However, some public project owners, who have seen their capital and operations heavily impacted by the pandemic, took a more cautious stance, with some projects that had been planned to start in 2020 postponed.

Pre-construction planning and design work slowed during the height of the lockdown, but by far not to the extent as construction on site, and we have seen a significant pick-up in planning and design work in the second half of 2020.

CHART 79: SEATTLE CONSTRUCTION STARTS



Source: ENR, Dodge Data, Dharam Consulting

Current Pipeline

Our estimation of construction cash flows based on our major projects pipeline of known projects in Seattle is shown in chart 80. The projects list focusses on residential and non-residential buildings, as well as transportation investments by Sound Transit. Project costs are estimates only and the analysis excludes a number of projects that are being proposed and in some cases are already in pre-construction, but for which construction timelines have not yet been announced.

Construction activity peaked in 2019 and was expected to moderate. The pandemic put a harder brake on work on site in 2020, but we expect that activity will pick up moderately in 2021, as pent-up demand in the education and residential sectors in particular will lead project activity. In addition, there are a number of large projects in the market, which are expected to keep the supply chain busy over the next years. More specifically, nine projects with a project value of +$1 billion are currently underway, of which five are transportation/infrastructure projects. The $2.3 billion Spring District is a masterplan project that is being rolled out over a +10-year horizon. Other large projects, such as the $1.6 billion Washington State Convention Center expansion and Waterfront Park are also developments which will draw significant resources.

Local Building Cost and Supply Chain Capacity

Local building costs in 2020 were 9% higher than the national average, according to ENR figures. Both, labor (13%) and material (6%) cost are higher. Local cost inflation has outpaced the national average in recent years; only two years ago, average costs were just 5% higher than nationally. In 2020, building cost inflation in Seattle rose in line with the national average, up 2.4% year-on-year.

Construction employment growth in Seattle has been firm in recent years, but unsurprisingly, job levels dropped during the spring lockdown, with the industry shedding a massive 36% of jobs between January and April 2020. Resumption in industry activity recovered most jobs however throughout the year and in November 2020, job levels were 4% higher than at the start of the year (chart 81).

According to ENR data, labor cost increases in Seattle, significantly outpaced the national average in the last three years. The Seattle common labor index was up 2.7% in 2020 compared to 2019. The skilled labor index rose 2.1% over the same period. This compares to a national average of 1% and 1.6%, respectively over the same period. Current prevailing wages in Seattle are shown in chart 82. Prevailing wage rates, as reported by the City of Seattle have increased over the past year – in parts - significantly. Carpenters, electricians, ironworkers and power equipment operators saw the largest wages increases.

In line with national trends, the building materials market has seen significant supply disruptions in 2020, which have caused lead times to lengthens and prices to surge in 2020. Materials prices in Seattle started to rise significantly in May. Overall prices rose by 2.5% in 2020 as a whole, but this mask a 5% year-on-year rise in the final quarter of the year (chart 83).

CHART 80: ESTIMATED PROJECT CASHFLOW

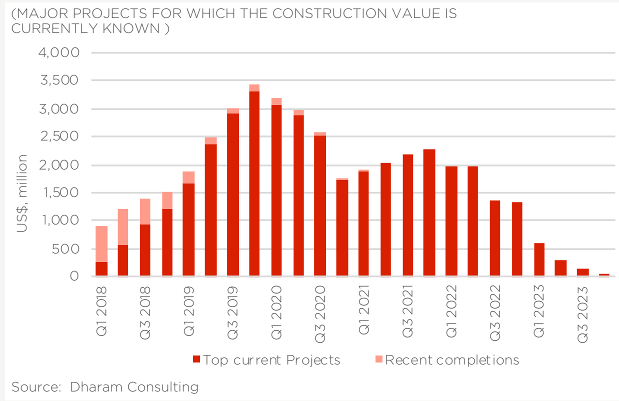


CHART 81: CONSTRUCTION EMPLOYMENT

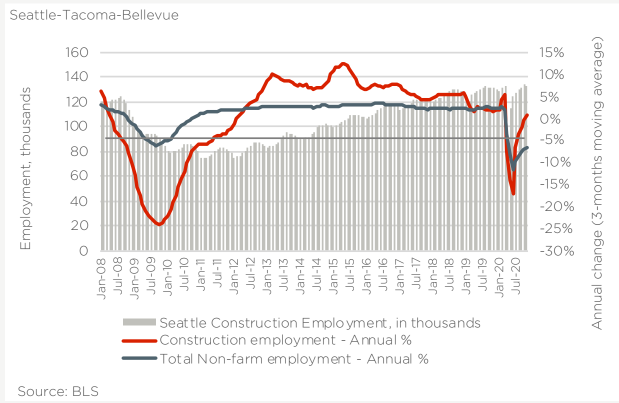


CHART 82: PREVAILING WAGES

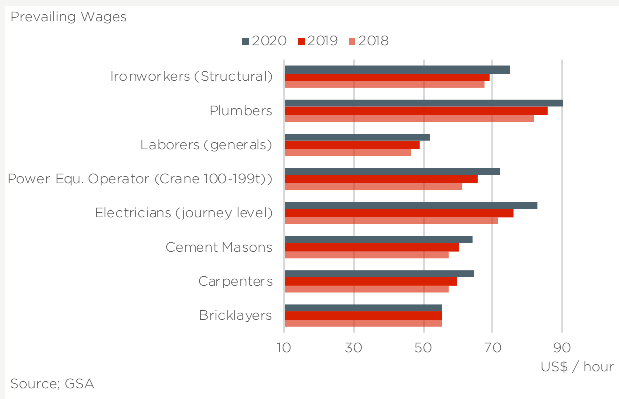
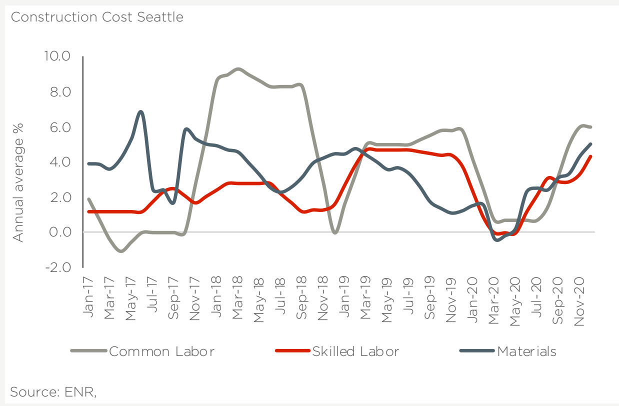


CHART 83: SEATTLE INPUT COST INFLATION



Bid Submission Prices

Bid submission prices in Seattle outpaced the national average consistently in the past six years, as a record pipeline coupled with capacity constraints and rising material prices caused upward pressure on contractor pricing.

Labor shortages have been evident in the market, in particular since the start of large, complicated schemes demanded increased levels of specialist labor and experienced contractors. These projects, of which there are still a number under construction are likely to continue to draw significant skilled resources, adding to higher wage costs in the supply chain.

The moderation in the pace of construction work and new projects being tendered, a trend that in the first half of 2020 was exacerbated by the pandemic, caused bid price inflation to slow in 2020 (chart 84), though overall, escalation remained above the national average.

Looking ahead, we anticipate more moderate price inflation over the next two years than levels seen over the past few years, but we do not anticipate prices to decrease. Schemes currently underway in the Seattle market are expected to keep the supply chain sufficiently busy.

Our central scenario is based on the following assumptions:

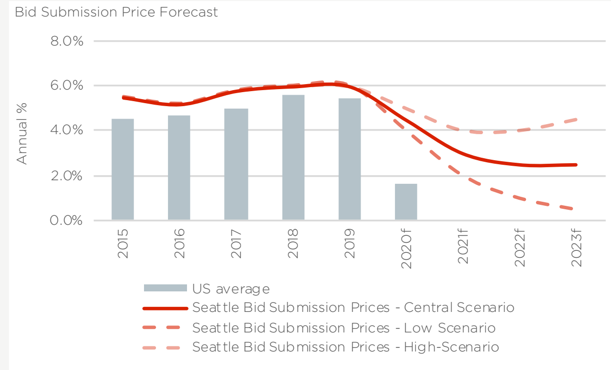
» Uncertainty over economic outlook impacts investor confidence and slows the pace of construction nationally, which may impact the regional market. Confidence in the dominant tech sector is strong, but other major sectors are struggling, which weighs on the overall sentiment in the local market.

» Pick up in pipeline work in 2021. Large masterplan and transportation projects will sustain workflow, but these are phased over long time periods and roll-out will be subject to market demand. We suspect that changing market conditions has already pushed out the delivery time of some of these schemes.

» Labor constraints and increased material prices put a floor on construction costs. Labor capacity constraints are impacting both on (skilled) labor cost and construction durations.

» Given the more uncertain medium-term outlook for the business environment, the local construction industry is unlikely to invest heavily in capacity unless any major project commitments are made and contracts are in place.

CHART 84: SEATTLE BID SUBMISSION PRICE FORECAST



Source: Dharam Consulting, Turner Construction

Our view: Construction starts slowed significantly in 2020, especially for non-residential commercial and institutional buildings, as project owners prioritized the immediate pandemic response or re-assessed their capital programs in light of demand risks. Large masterplan and transportation projects will sustain local workflow, but roll-out is long-term and will be subject to market demand. Encouragingly, we have seen a significant pick-up in planning and design work in the second half of 2020, which is expected to feed into the project pipeline in late 2021. We anticipate more moderate price inflation over the next two years than levels seen over the past few years, but overall we do not anticipate prices to decrease.

CLEVELAND

MARKET OVERVIEW

City Economy

Cleveland's economy had lagged the average national performance over the last business cycle and the pandemic shutdown plunged the local job market into a deep crisis. Job losses of 15.6% between January and April were, as in other locations, partially recovered over the remainder of 2020. At the end of November jobs were down 5.7% compared to the start of the year. A further recovery is widely expected in 2021, but employment growth may lag wider economic growth over the next 12 to 24 months, with the job market expected to take until into 2022 to recover to pre-pandemic levels.

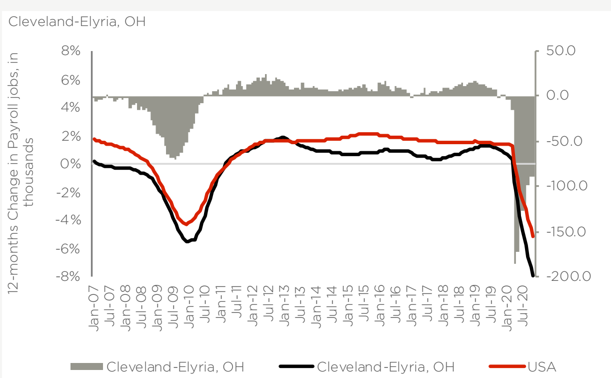
Construction Activity

Local construction activity has increased over the past years, led by capital investment of large healthcare providers, most notably Cleveland Clinic, MetroHealth System, and University Hospitals, all of which expanding their services to gain market share. Other institutional investors, such as higher education providers have also been investing to expand not only their educational space but also student housing provision.

Construction was deemed essential in Ohio and work was allowed to continue during the Spring 2020 stay-at-home orders. Whilst the pandemic slowed the flow of some projects, a strong pipeline kept the market busy last year. A number of high-profile projects were completed, including the $136 million Lumen residential tower.

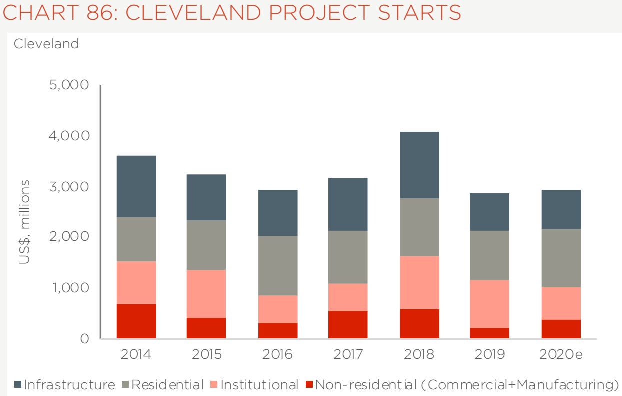
Dodge estimates that starts in Cleveland totalled $2.9bn in 2020, relatively unchanged compared to the preceding year (chart 86). Residential and mixed-use commercial developments increased, with the ongoing transformation of Downtown Cleveland. The largest sector, residential saw an estimated $1.1bn worth of construction starts in 2020, as the sector continued to see strong demand. There was an estimated $370 million worth of non-residential project starts, while institutional starts totalled an estimated $645 million. Healthcare accounts for the largest project currently underway in Cleveland, namely, the $950 million MetroHealth Hospital + Campus.

CHART 85: CLEVELAND EMPLOYMENT TRENDS



Source: BEA, Dharam Consulting

CHART 86: CLEVELAND PROJECT STARTS



Source: ENR, Dodge Data

Our view: Led by redevelopments in the downtown area, as well as investments by healthcare and educational institutions, the local project pipeline is increasing. Limited capacity in this mid-size construction market has put pressure on construction prices, a trend which we expect will persist this year and next.

Current Pipeline

Our major projects pipeline in 2020 contains 42 active projects with an estimated project value of $5.6 billion. A number of significant projects are in planning stage. Chart 87 shows our estimation of cash flow over the next years. Construction cash-flow in 2020 held stable at levels seen in the preceding two years. An increase is now expected in 20021, as MetroHealth's Hospital and Campus and other significant projects ramp up work on site.

One of the challenges in the local market, especially for (mixed-use) commercial projects is the difficulty of balancing budgets in a sector where construction costs are generally high. Many projects rely on tax exemptions and/or public subsidies and where these are not available, projects are either being scaled back or can be slow to get off the ground. A new law (Senate Bill 39) signed in December 2020, authorizing capped tax credits for insurance companies to invest in "Transformational mixed-use Development" projects, aims at incentivizing projects in downtown areas. Projects, which have to exceed $50m, may include new construction, as well as redevelopment, remodelling or improvement of vacant buildings or structures. The tax credit is capped at 10% of the total project cost.

There are still significant projects in the pipeline and the new incentives may help some of these off the ground, provided demand holds up. In that case these projects will provide significant work for contractors in Cleveland going forward.

Local Building Cost and Supply Chain Capacity

Overall, local construction costs are lower than the national average, due to lower labor cost. However, there are significant differences amongst sectors. In particular, the cost of building mixed-use mid- to high-rise buildings tends to be significantly higher than infrastructure projects, due to a higher share of skilled labor and specialist trades involved. Building input cost inflation in Cleveland has been lower than the wider US average over the past four years (chart 88). In 2020, building costs in Cleveland increased by 1.5%. Over the course of the year, building cost inflation picked up, as higher material prices in the second half of the year fed through the supply chain.

After an initial 10% decrease in the Spring 2020 shutdown, construction employment continued to rise throughout the year, by far outpacing wider jobs growth in the city (chart 89). Construction employment at the end of November 2020 was up 12% compared to levels seen at the start of the year, which is one of the highest growth rates in the country.

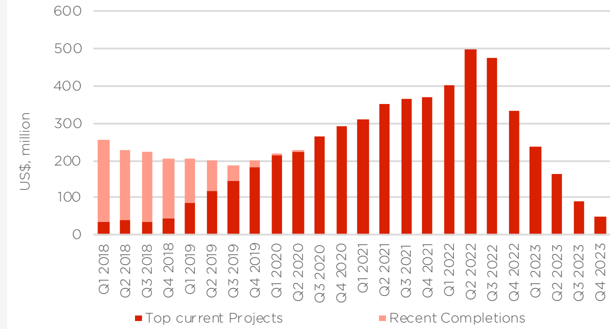
Construction activity over the past years has been accompanied by rising capacity constraints, in particular skilled labor and contractors experienced to work on large-scale construction projects and specialist work. Competition is particularly strong for sub-contractor resources across the majority of trades.

Despite reports of wage escalation in the local market, the ENR reports little local labor cost inflation in recent years. The Cleveland common labor index was unchanged in 2020, while the skilled labor index rose by a modest 1%. Current prevailing wages in Cleveland (Cyahoga County) are shown in chart 90.

In line with national trends, building material price inflation picked up significantly in the second half of 2020.

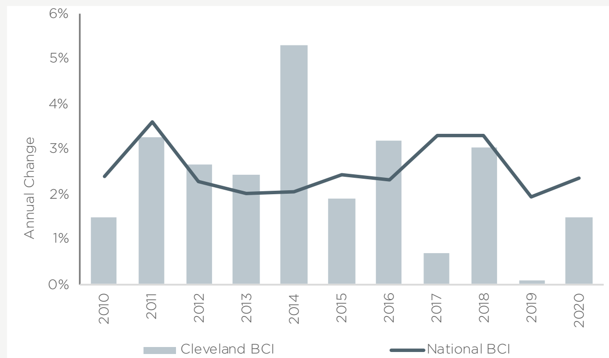
CHART 87: ESTIMATED PROJECT CASHFLOW

(MAJOR PROJECTS FOR WHICH THE CONSTRUCTION VALUE IS CURRENTLY KNOWN)



Source: Crains Detroit, BLDUP, Dharam Consulting

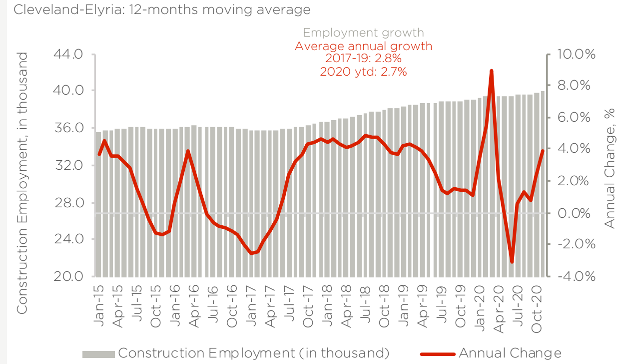
CHART 88: CLEVELAND BUILDING COST INFLATION



Source: ENR

CHART 89: CONSTRUCTION EMPLOYMENT

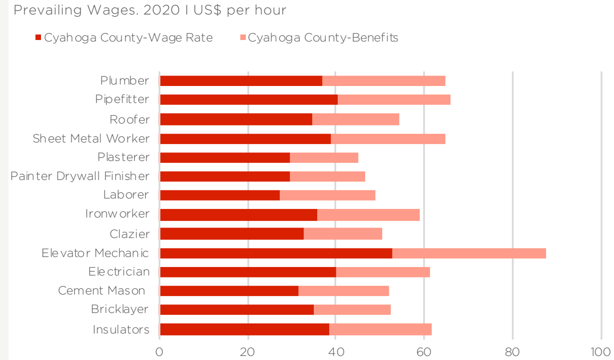
Cleveland-Elyria: 12-months moving average



Source: BLS, Dharam Consulting

CHART 90: CONSTRUCTION EMPLOYMENT

Prevailing Wages. 2020 I US$ per hour



Bid submission prices

Average bid submission price inflation in Cleveland rose in line with the national average in 2019. We estimate that average contractor bid prices continued to rise in 2020 at around 4%, on the back of an active market and input cost pass-through (chart 91).

Based on our work pipeline projection, price inflation is forecast to stay at this level in 2021.

Our central scenario is based on the following assumptions:

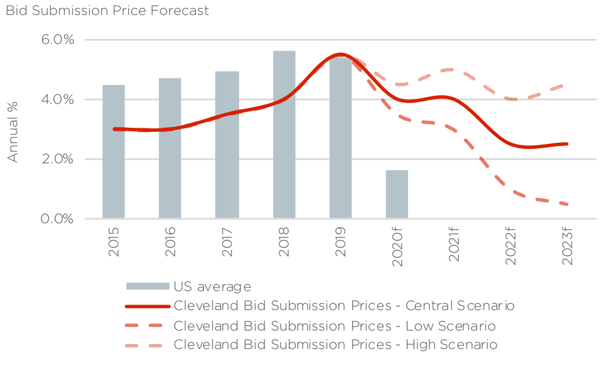
» Significant projects are underway and / or are in the pipeline and the level of work is increasing in 2021.

» Input cost pressures are expected to persist in the near term and competition for contracting and labor resources will be maintained in an already tight market.

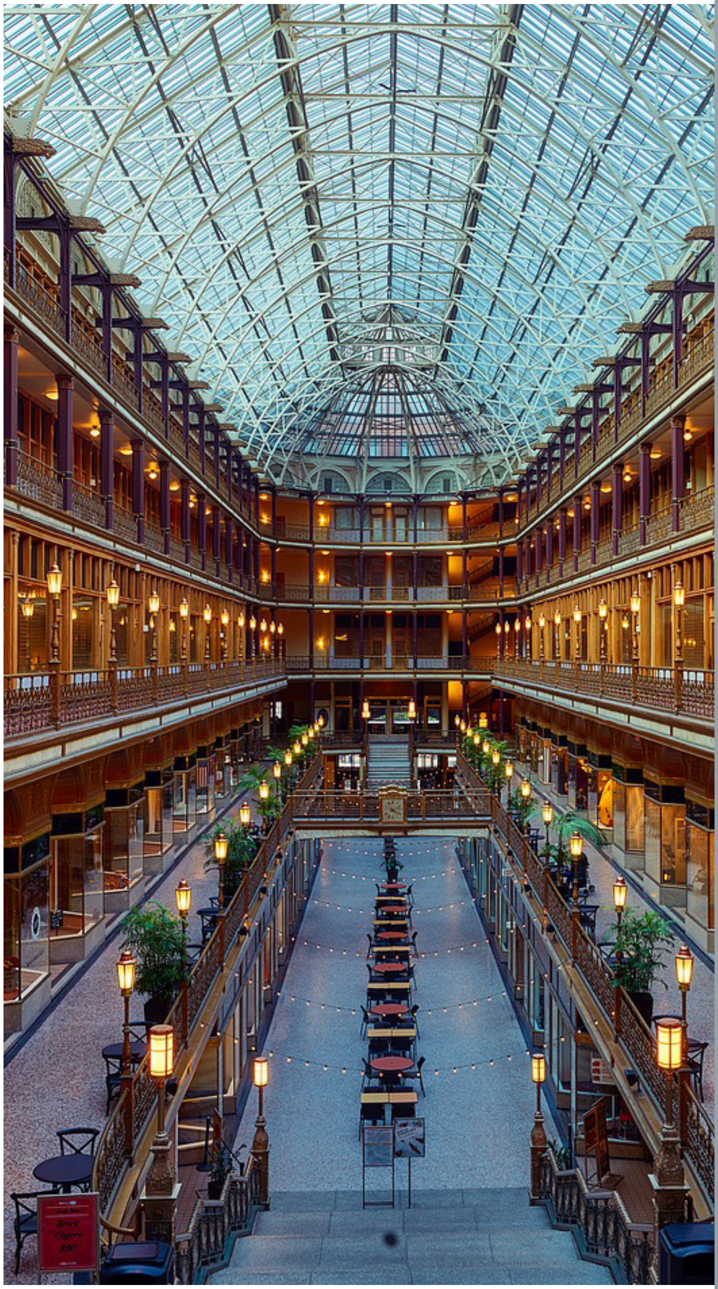
» Large, complicated schemes, demanding specialist labor and experienced contractors, such as large healthcare projects are likely to command higher prices. At the same time, smaller projects may face difficulties to attract sufficiently competitive resources, which may lead to higher average cost.

» Upward pressure from material price rises.

CHART 91: CLEVELAND BID SUBMISSION PRICE FORECAST



Source: Dharam Consulting, Turner Construction



Cleveland

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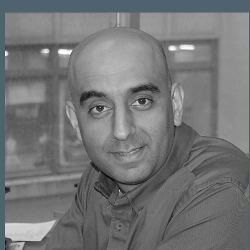

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