Turner & Townsend

US market intelligence

Continued resilience

Q3 2023 Fall

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Introduction

Turner & Townsend is a global professional services company specializing in program management, project management, cost and commercial management, and consulting across the real estate, infrastructure, and natural resources sectors.

It is my pleasure to present the 2023 fall edition of our United States market intelligence report.

The US economy has been reassuringly resilient of late, posting strong growth figures in Q3 2023 as a robust labor market fueled expenditure-driven Gross Domestic Product (GDP) increases.

That growth, however, comes regardless of stubborn inflationary pressure that, while improving over the course of the year, remains above the target set by the Federal Reserve (Fed). This may leave the Fed with less room to maneuver when determining monetary policy and interest rates will likely remain high well into 2024.

Unfortunately, the ripple effects of lower credit availability, tight capital markets and affordability may well dent economic performance moving into 2024. An election year, which creates a level of instability despite the outcome, also coupled with renewed geopolitical conflicts, further temper activity levels.

For now, though stability is appreciated, and the US construction industry is mimicking aspects of the wider durability of the economy. High-tech manufacturing, data center and infrastructure developments continue at a brisk pace and are generally longer-duration projects. Current backlogs of work also appear to be stable.

While the immediate pipeline looks to be healthy, industry confidence appears to be weakening, and workloads are likely to drop as construction starts to ease. This should, however, encourage a healthy dose of commercial tension and competition within the confines of the market.

Supply chains, while significantly improved, have not recalibrated fully. Procurement, particularly for mechanical and electrical equipment and components, like switchgear, can still be challenging. This, with the addition of increased labor costs, is likely to instill a steady transition in pricing, but not a swift one.

Even with the construction landscape changing, there are plenty of reasons to be positive, and a diverse market to operate in. Yet risks are emerging, and these will ebb and flow as the industry transitions into a new phase.

I hope that you will benefit from the insights in this report. Please reach out to our contributors for more information on our local markets.

John Robbins
Managing Director, United States

Economic overview

US economic growth continues flying in the face of uncertainty

Real GDP made healthy gains in Q3 2023, recording growth of 4.9 percent at an annual rate. This rate of change is over twice as much as the 2.1 percent posted in Q2 2023 – increasing by 2.8 percentage points - and is the fastest recorded in seven quarters.

> Encouragingly, a boost to residential investment, which had previously fallen for nine consecutive quarters, supported high GDP growth, along with an uptick in consumer spending following wage increases.

While this growth is perhaps not sustainable, it does reinforce the fact that the US economy is resilient. Much more so than the position that many thought it would be in at the close of the year.

Sturdy employment growth – increasing by 0.3 and 1.8 percent on the quarter and year as of Q3 2023 – and low, stable unemployment rate of 3.7 percent over the same period helped lift the US economy.

The strong labor market contributed to wage growth, which is rising above general inflation – putting more money in people's pockets – and this is circulating through the economy. However, with services inflation still elevated, recording 4.0 percent in October 2023, this may potentially require interest rates to remain high for a time. That raised position will undoubtedly chip away at the increased consumer spending figures that elevated Q3 2023 GDP into such a lofty position, with a lagged effect materializing as higher borrowing costs kick in.

Albeit high, that wage growth has been moderating as well. Student loan repayments are also due in October 2023, which may further restrain consumption. Nonetheless, the position the US economy finds itself in is a welcome one. Far better to be discussing solid growth than economic contraction.

Recession talk doesn't appear to be going away, and the US economy may need to navigate through continued market turbulence. Geopolitical instabilities continue to rumble worldwide, and political strife also unsettles closer to home.

Despite that, the Fed, and the rest of the US, will be hoping to negotiate a soft landing going into 2024. And that may well happen, with US GDP poised to grow by 1.5 percent in 2024 according to the Fed.

Figure 1: Key economic indicators - movement (%) or index value where stated

Key Economic Indicators	Current		Previous	
Real GDP (QoQ %)	**1.2**	Q3 2023	**0.5**	Q2 2023
Real GDP (QoY %)	**2.9**	Q3 2023	**2.4**	Q2 2023
Inflation – Consumer Price Index (MoY %)	**3.2**	Oct 2023	**3.7**	Sep 2023
Unemployment Rate (%)	**3.9**	Oct 2023	**3.8**	Sep 2023
CB Consumer Confidence Index	**104.3**	Sep 2023	**108.7**	Aug 2023
Federal Funds Effective Rate (%)	**5.33**	Sep 2023	**5.33**	Aug 2023

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, Conference Board, Federal Reserve

Construction market overview

Construction activity remains strong but is tapering off

Seasonally adjusted annual growth rates in construction spending, measured at current values, have softened to 2.5 percent on the quarter and 7.2 percent on the year as of Q3 2023. Month-on-month data for August and September 2023 saw a fall of 0.4 and 1.0 percent, respectively.

> Residential activity, despite its first increase in five quarters, has struggled as interest rates take hold, and spending dropped by a notable 3.9 percent on the year to September 2023. This is the tenth month of consecutive month-on-year decreases.

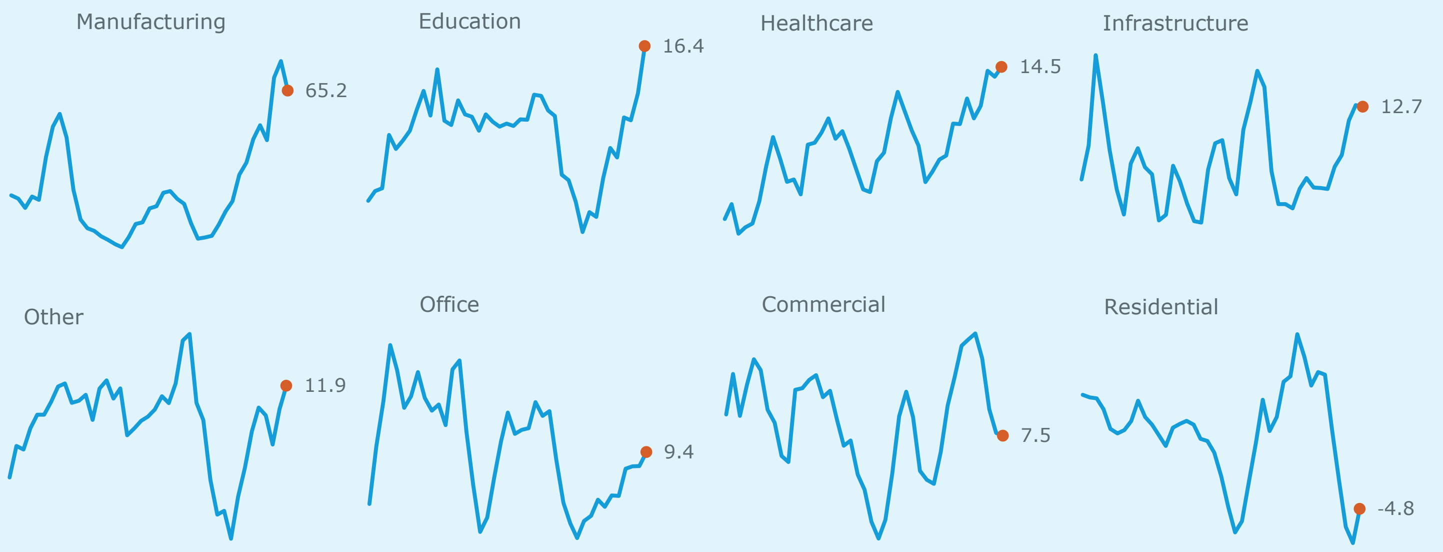
Conversely, non-residential activity remains buoyant. Manufacturing spending has been strong, appreciating by 65.2 percent on the year in Q3 2023, albeit slowing down in recent months. Demand for computers and electronics, and the facilities needed to produce these items, has spurred this increase.

Infrastructure also looks to have broad-based growth embedded due to President Biden's Bipartisan Infrastructure Law and committed spending filtering into projects on the ground. All sub-sectors have increased on the year, with spending in power, water supply and transportation contributing to vibrant growth.

Office and commercial activity posted high single-digit growth on year at 9.4 and 7.5 percent, respectively. Yet these areas remain exposed to variable return-to-office policies, and some commercial developers may have seen increasing difficulty securing loans and funding for developments.

When adjusted for inflation, however, removing escalation from the picture, spending is less strong. The overall amount of what is being built isn't necessarily increasing, rather the cost of it is.

Figure 2: Construction spending over the past ten years to Q3 2023, by sector - ordered quarter-on-year growth



Source: Census Bureau

Construction market outlook

High costs impact construction pipelines

Construction's suite of leading indicators loosely provide expectations for the coming 9-12 months. They appear to be moving in sync with recent monthly activity gauges, painting a less positive picture of the overall industry.

> On balance, construction's suite of leading indicators point toward a softening of construction activity.

The Architectural Billings Index declined for the second consecutive month after a marked contraction in September 2023, although institutional buildings kept their head above water, recording 50.1 in their diffusion index. Above, or below, 50 indicates an increase or decrease in architectural billings, respectively.

This view is reinforced by Dodge Construction Networks Momentum Index. It detailed a softening in its commercial component by 1.0 percent on the month, while the overall index's month-on-year measure fell by 5.0 percent in September 2023.

The Construction Financial Management Association's CONFINDEX, measuring chief financial officers and other financial professionals' confidence in the construction market, dipped to 99 in Q3 2023. 100 equates to a stable market, and the latest data suggests a pessimistic mood, with confidence at its lowest point since Q4 2020.

Not all forward-looking metrics are negative, though. *Engineering News Record*'s (ENR) confidence index and Association of Building Contractors' (ABC) backlog indicator are more optimistic.

The ENR identifies the Midwest as being a particularly resilient market, although the West is evidently under some duress. The ABC suggests that contractors have enough work to see out the next nine months, indicating that immediate pipelines are secure even if new workloads beyond that may dip.

Having said that, the negative leading indicators unfortunately seem to be outnumbering the positives, and there are clear warning signs that construction industry activity will weaken.

Construction Connect's Project Stress Index indicates how many pre-construction projects have been put on hold, delayed or abandoned over a 30-day period. For the week closing 29 October 2023, stress levels were 20.2 percent above the typical 2021 reading. It appears that high costs, reduced financing options and persistent uncertainty have affected decision-making. So, while the US economy looks to be durable, its construction industry may be at the forefront of softening market activity.

Figure 3: Key construction market metrics - movement (%), index value or months where stated

Metric	Current Period		Previous Period	
ENR Confidence Index	**46.0**	Q3 2023	**40.0**	Q2 2023
CFMA Confidex Index	**99.0**	Q3 2023	**101.0**	Q2 2023
AIA/Deltek Architectural Billings Index	**44.8**	Sep 2023	**48.1**	Aug 2023
ABC Construction Backlog Indicator (months)	**9.0**	Sep 2023	**9.2**	Aug 2023
Dodge Momentum Index	**182.5**	Sep 2023	**178.0**	Aug 2023
DCN Nonresidential Construction Starts (MoY %)	**4.4**	Sep 2023	**-16.0**	Aug 2023

Source: Engineering New Record, Construction Financial Management Assosciation, American Institute of Architects, Associated Builders and Contractors, Dodge Construction Network

Construction input cost analysis

Many materials correct down while labor and machinery and equipment costs remain elevated

The vast increase seen in the cost of many construction materials and components following the COVID-19 pandemic and conflict in Ukraine has settled. Since the peak in costs in April 2022, the cost of building materials fell by 3.2 percent by September 2023.

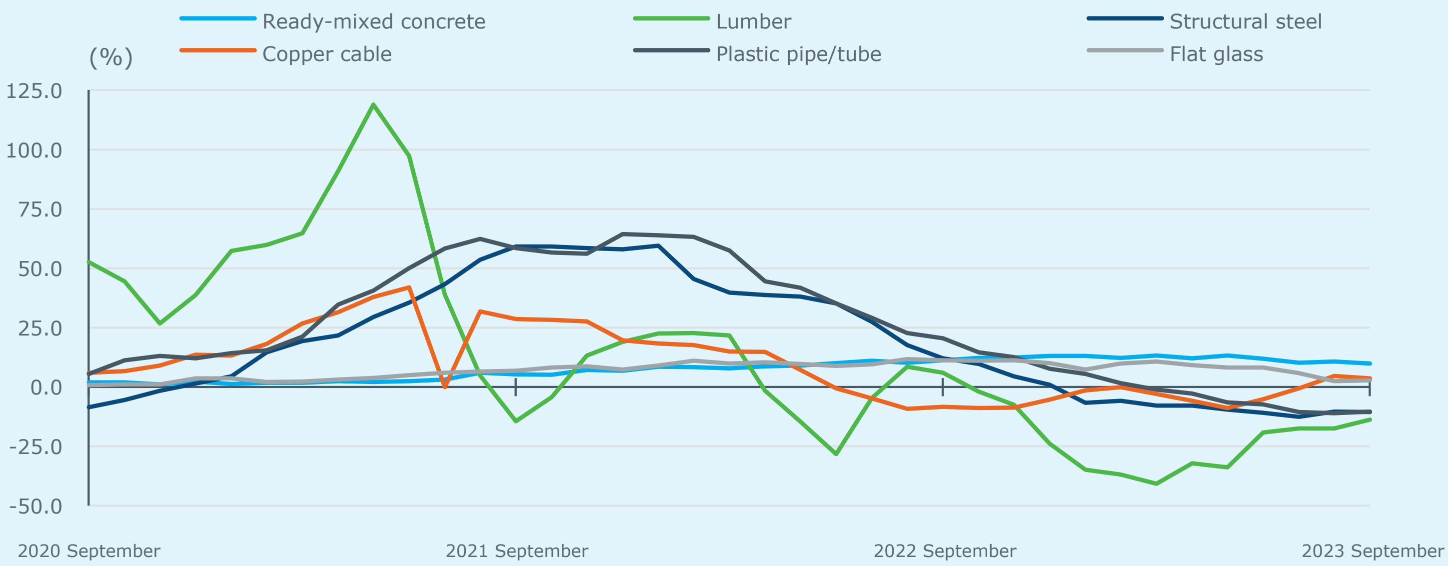
Fractured supply chains are being slowly rebuilt freight bottlenecks have alleviated and intermittent availability of products has become more consistent. This has been helped by freight access increasing and costs falling heavily. According to the Freightos Baltic Index, global container freight costs were US$1,091.1 at the end of October 2023 and close to ten times less expensive than their relative peak seen in September 2021.

With this reduced level of volatility and lower cost variability, cost projection and cost planning are becoming more manageable than before.

Isolated spikes in certain products still present themselves, though. Ready-mixed concrete increased by 10.8 percent in September 2023, and other concrete items remain stubbornly high as infrastructure demand soars. HVAC (Heating, Ventilation and Air Conditioning) and electrical components still experience long lead-in times as data center construction continues at pace, amplifying shortages amidst increased demand.

There is plenty of scope for cost recovery available, however. Lumber, structural steel, and plastic pipe/tube have decreased by 18.0, 12.7 and 11.0 percent on the year over the same period. These materials also offer much more predictable lead-in times as residential workloads cool off due to reduced disposable incomes and lower finance availability and affordability.

Figure 4: Producer price indices for select construction materials, month on year percentage change



Source: Bureau of Labor Statistics

While material costs soften, labor costs are rising. A low employee attraction rate and a heavy churn rate have left labor stocks low. Construction's unemployment rate is close to record lows, recording a value of 3.9 percent as of September 2023.

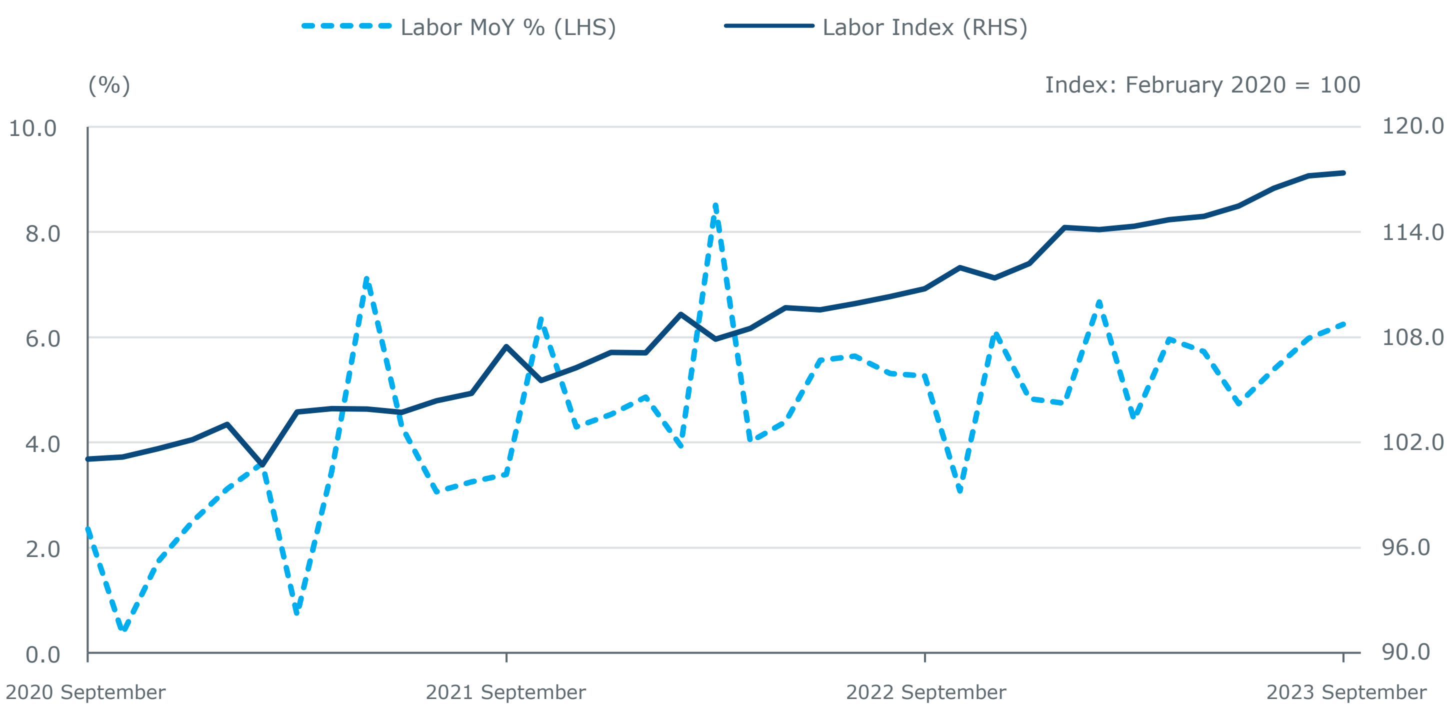
Generational shifts in work-life balance perceptions and broader social economic change, early retirement and leaving the labor force entirely, have also contributed to construction talent sourcing constraints. Even with employment steadily increasing, growing by 2.8 percent in September 2023, people pressures persist.

Construction input cost analysis

These challenges, coupled with buoyant demand, have inevitably created little slack in the market, contributing to notable increases in pay. Average weekly wages in construction increased by 0.1 and 6.0 percent on the month and year respectively in September 2023 and continue to increase above general inflation.

Furthermore, in its latest Settlements Report, the Construction Labor Research Council corroborates strong earnings growth. They have recommended that construction industry collective bargaining agreements, ratified from January–September 2023, provide an average 4.6 percent increase in the first contract year.

Figure 5: Construction average weekly earnings, indexed and month on year percentage change



Source: Bureau of Labor Statistics

It is expected that wage growth will settle, yet the rate of change experienced will likely be a steady transition downward as the labor market holds.

Machinery and equipment costs are also pushing input costs up. In September 2023 costs increased by 0.2 percent on the month and 6.1 percent on the year, respectively, as a large volume of civil engineering works have left stocks low. Operational costs, however, are being helped by a reduction in diesel prices by 10.2 percent on the year.

Generators, which increased by 7.7 percent on the year in September 2023, also have low availability. Many high-tech manufacturing developers have made bulk advance purchases to lock in capacity, reducing supply, and this is restricting construction progress, delaying getting shovels in the ground on some projects.

Escalation forecast

What do current market conditions mean for our escalation forecasts?

The cost to deliver construction projects continues to see escalation growth. While construction materials and services input costs have settled, bid prices, which aim to measure the trend of contractors' pricing levels in accepted bids, are less inclined to shift downward.

Following a period of absorption during COVID-19 and the ongoing conflict in Ukraine, contractors have been more able to pass on input cost escalation and recoup losses. As of September 2023, materials and services input costs increased by just 0.1 percent compared to the 4.3 percent seen in bid prices.

Still, there are multiple competing forces behind escalation growth and a complex interplay of factors at work demining price setting. The list below highlights some, but not all, that are the forefront of our decision making when it comes to calculating escalation:

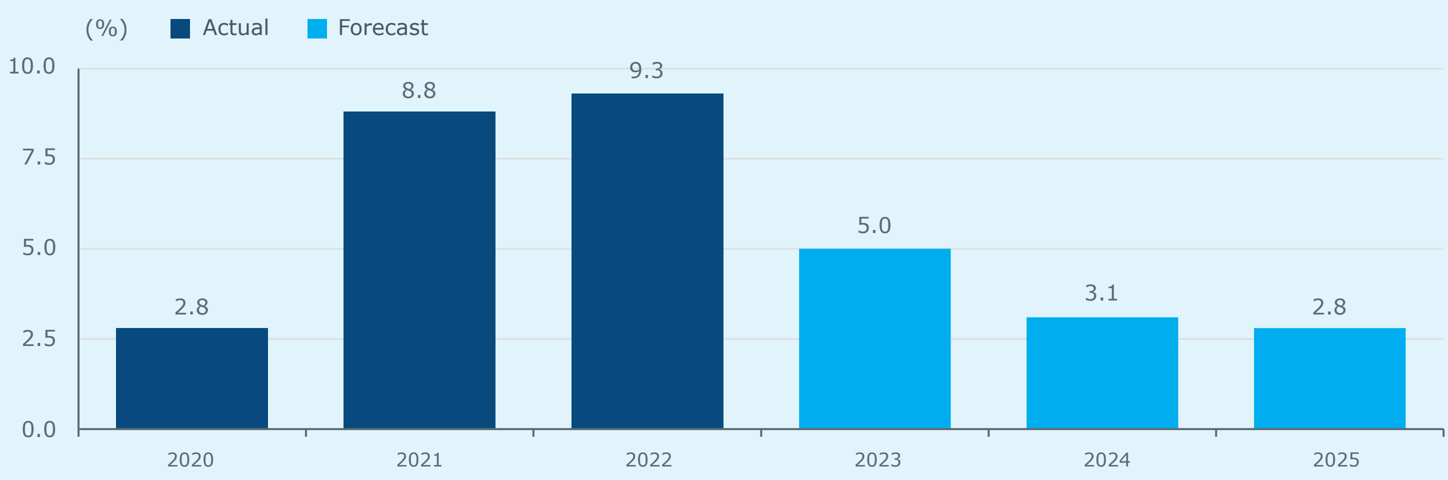
- Current activity – resilient, yet variable by sector.
- Leading indicators – several reports of diminishing pipelines, albeit immediate backlog of work stable.
- Materials cost and availability – isolated cost spikes exist, but growth easing.
- Workforce – skills shortages persist, and wage growth is increasing.
- Recession – talk will not go away. Insolvency risk is rising, which will test contractor resilience.

Taking stock of the above factors leaves our 2023 escalation estimate the same. With much of the year passed, significant change is not expected to occur.

As a result of further weakness in construction's leading indicators, our escalation expectations for 2024 have shifted slightly downward - moving from 3.6 percent to 3.1 percent on average. Greater surety is sought in workloads, and contractors may well push down prices to ensure order books and cashflows tick over.

Having said that, selective bidding is still occurring for specialist trade packages on projects that are unique and complex in nature. Risk is factored into bids accordingly, taking account of perceived dangers in delivery. With fewer general contractors willing, or able, to submit bids, tender lists can be small – reducing competition and elevating pricing.

Figure 6: National bid price escalation forecast, annual percentage change



Source: Turner & Townsend

These forecasts are representative for the USA as a whole and escalation may vary by project size, value, procurement route and state. Projects do need to be assessed on an individual basis and may not always align to our published figures. For further assistance on cost assurance and escalation analysis in your area, please contact Turner & Townsend.

Escalation forecast

When looking at 2025, our forecast sits closer to historical norms. Supply-chain capacity may be released as workloads soften, easing price pressures. Yet the knock-on effect of high borrowing costs from elevated interest rates may begin to put strain on contractor cashflows, creating insolvency risks and reducing supply-chain capacity should businesses begin to fail.

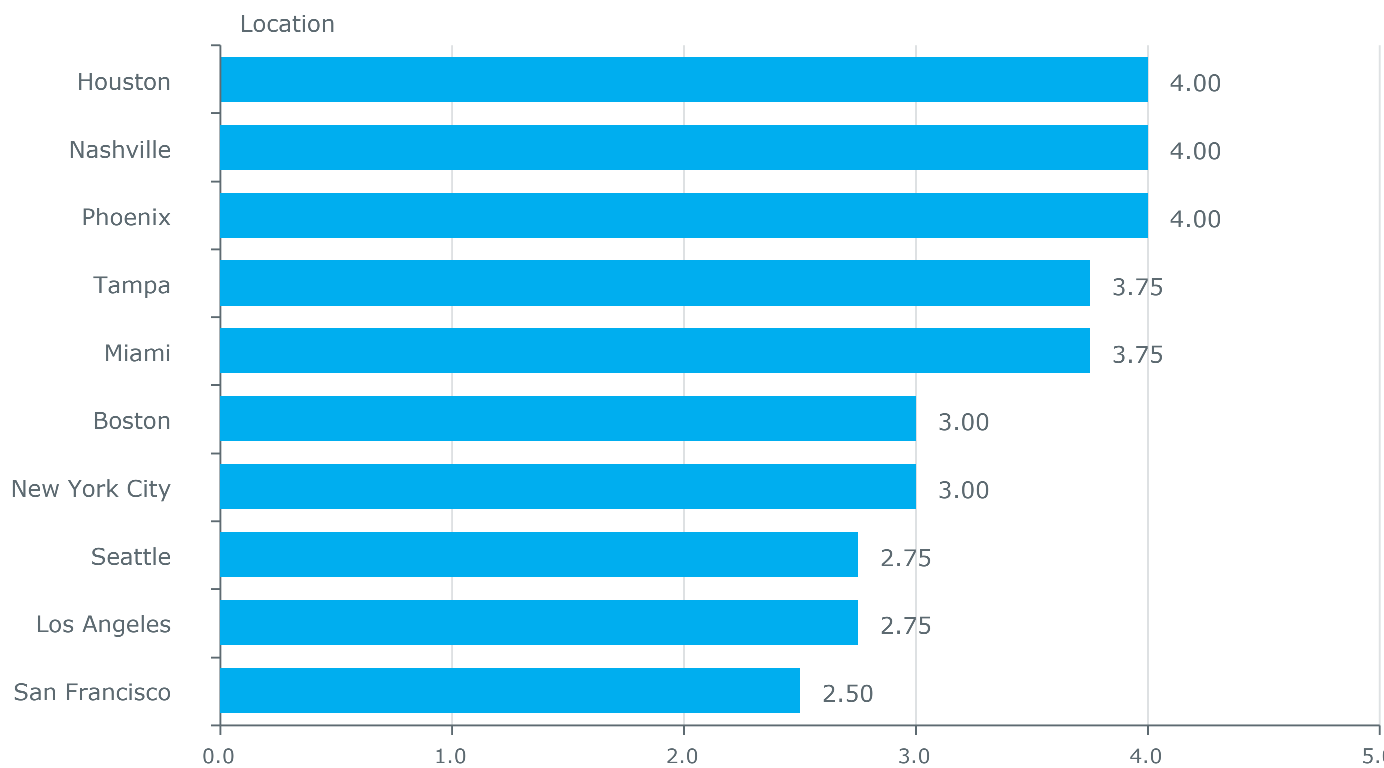
As such, bid prices may not reduce notably. Our view is that escalation will move to 2.8 percent on average in 2025, down 0.2 percentage points.

Rising geopolitical instability could, however, place additional constraints on construction material and component availability, shift costs and affect demand profiles if confidence takes a further hit. Ultimately, escalation may increase by more – or less - than the averages referenced at a national level throughout the forecast horizon.

That variability is present across different sectors, but also locations. West coast cities such as Seattle, San Francisco and Los Angeles, are perhaps less fortunate in terms of pipelines and are experiencing lukewarm markets which are displaying competitive tendering environments. Many East coast locations are proving to be more resilient to escalation reductions. New York, Boston, Tampa and Miami look to be more stable than some west coast areas.

The centralized locations, however, are experiencing stronger market conditions, and pricing practices are reacting accordingly. A continued influx of people is helping to sustain residential demand despite high interest rates, and supply chain shortages appear to be more acute as activity levels impact availability.

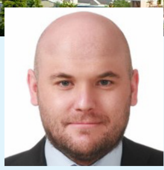
Figure 7: Location specific bid price escalation forecast, annual percentage change - 2024



Source: Turner & Townsend

Seattle

Market conditions remain challenging and workloads continue to soften



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Seattle's construction market, generally speaking, is lukewarm, with demand easing as fewer opportunities materialize. A low return-to-office rate, enhanced by the large volume of remote working technology firms in the area, is pegging back the occupier market. High cost growth has also destabilized the residential sector, and investment is being delayed, deferred or even cancelled.

The mood isn't fully pessimistic, however, as infrastructure works, road, rail and aviation in particular, hold steady and promote market stability. The education sector is slowly picking up with a blend of public and private expenditure and life sciences and healthcare continue to grow.

This overall downshift in demand is starting to change the appetite of contractors when bidding, with more firms eager to win new work. Additionally, prices for commodity-based materials are stabilizing and freight costs and timelines are more manageable, helping to reduce cost escalation rates.

Labor costs are still problematic, however, and there continues to be a lack of skilled workers in the region, prompting wage increases. Average hourly earnings across the state of Washington for construction workers were US$45.7 per hour as of September 2023 - some of the highest values nationwide.

Washington State Energy Code regulations may also push costs up for construction in the short term, adversely impacting escalation rates. These competing forces are causing bid price growth to marginally, not massively, reduce. Escalation in the order of 2.5-3.5 percent is expected in 2024, easing to 2.0-3.0 percent further down the line in 2025.

Key price indicators

Movement (%)

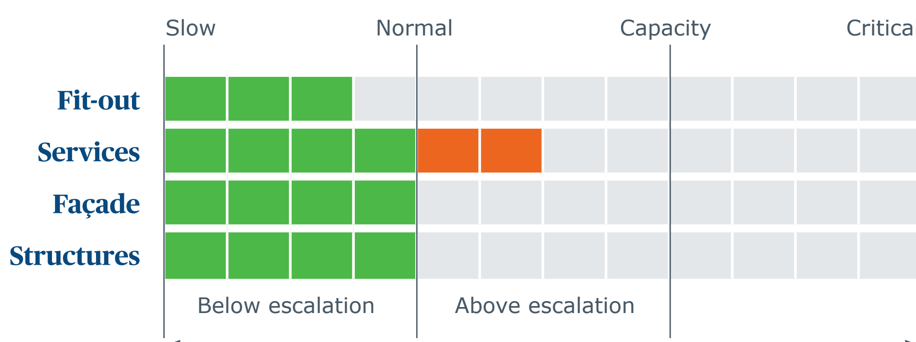
2.75%
Construction escalation YoY (2024)

5.4%
Inflation (CPI-U) MoY (Aug 2023)

-2.7%
WA Residential building permits by value QoY (Q3 2023)

3.6%
WA unemployment rate (Sep 2023)

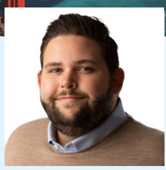
Figure 8: Supply chain capacity in Seattle



Sources: Turner & Townsend, Bureau of Labor Statistics, Census Bureau

San Francisco Bay Area

A subtle shift in market activity and steadily growing confidence gives hope for the future



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The past few months have seen a welcome uptick in performance and lifted the mood in the San Francisco Bay Area's construction market. Owner-occupier developers who have a long-term view on investment are taking advantage of muted tendering conditions and buying intelligently, looking to secure good value.

Healthcare, education and public sector works all appear to be increasing in demand, particularly in the Peninsula, North and South Bay, creating a steady stream of opportunities. A surge in artificial intelligence (AI) projects could also act as a new engine for growth, replacing the one left by the tech boom.

Downtown, however, continues to suffer. Remote working trends have caused many companies to retreat from the city center, resulting in record-high vacancy rates – 33.9 percent in Q3 2023 according to CBRE research. Outside of downtown, fewer data centers are being built with more affordable locations sought after, and industrial and manufacturing activity has softened.

General contractors no longer have large tech megaprojects on their order books, requiring them to be more competitive, alleviating price pressures. However, long lead-in times for equipment are creating risks, albeit they're slowly getting better. Labor costs are also easing, with month-on-year wage growth in California relaxing to 3.3 percent as of September 2023 – some of the lowest rates nationwide.

Escalation on the whole remains manageable, and bid price growth is expected between 2.0-3.0 percent in 2024, which may well be maintained in 2025.

Key price indicators

Movement (%)

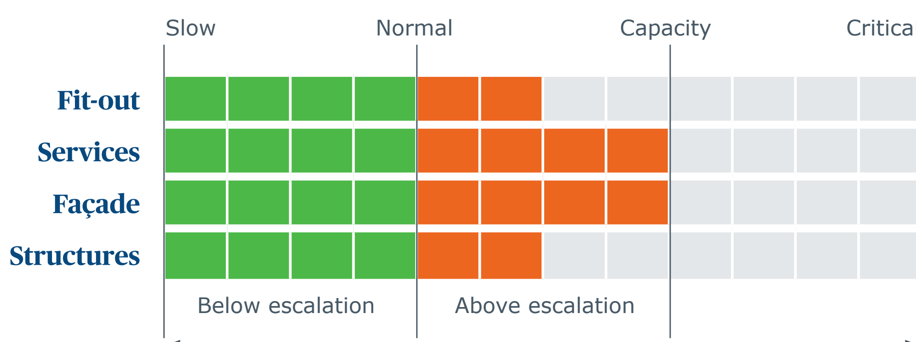
2.5%
Construction escalation YoY (2024)

3.4%
Inflation (CPI-U) MoY (Aug 2023)

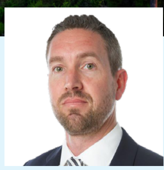
1.4%
CA Residential building permits by value QoY (Q3 2023)

4.5%
CA unemployment rate (Sep 2023)

Figure 9: Supply chain capacity in the San Francisco Bay Area



Sources: Turner & Townsend, Bureau of Labor Statistics, Census Bureau



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Los Angeles

Major infrastructure projects bolster long-term pipelines, yet short-term prospects remain subdued

LA's construction market continues to be affected by prohibitive project costs, lofty interest rates and a growing debt burden. These constraints have impacted the commercial and residential markets, yet housing demand is resilient due to pre-existing home shortages.

Activity levels are expected to remain steady over the coming 6-12 months. Looking further ahead, mixed-use developments will contribute to support growth with the help of the One Beverly Hills project. The Hollywood Park redevelopment is set to bolster the sports and recreation segment, and investment for the Olympics will no doubt see vital infrastructure laid before the main event in 2028.

Nevertheless, the immediate future is less vibrant. Projects are being deferred and general contractors are becoming more aggressive with bidding practices to win more work and fill their order books. This competitive tendering is being helped by stabilization in material costs as drywall, glass and steel have become more affordable.

As with many markets, LA is suffering from a shortage of mechanical and electrical equipment which come at a premium. High gas prices, some of the costliest in America, are adding a premium to machinery and equipment usage. Labor rates are also elevated with mechanical, electrical and plumbing trades increasing in line with demand, although core and shell and interior crafts are becoming easier to obtain.

On balance, however, escalation is easing, and commercial tension is playing its part in this downwards shift of price pressures. Bid price growth is expected to lay between 3.0-4.0 percent in 2024 and 2025.

Key price indicators

Movement (%)

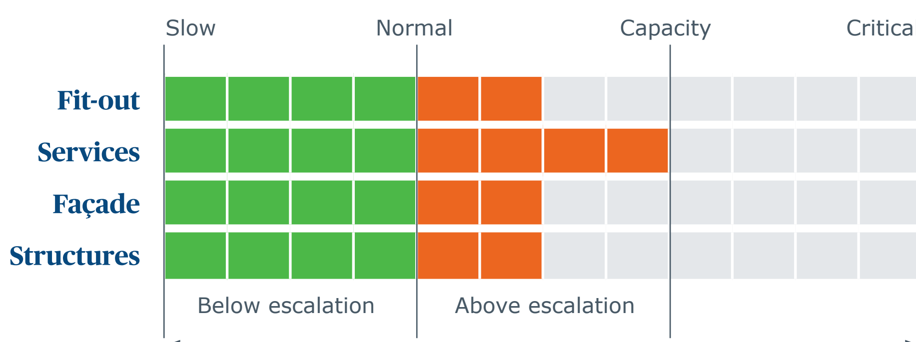
2.75%
Construction escalation YoY (2024)

3.2%
Inflation (CPI-U) MoM (Sep 2023)

1.4%
CA Residential building permits by value QoY (Q3 2023)

4.5%
CA unemployment rate (Sep 2023)

Figure 10: Supply chain capacity in Los Angeles



Sources: Turner & Townsend, Bureau of Labor Statistics, Census Bureau

Phoenix

The robust construction market is reinforced by strong demand for data centers and manufacturing facilities

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Data center activity has accelerated as AI matures and firms look to take advantage of lower cost land values in the area. The manufacturing sector is also booming, with project delivery unable to keep up with demand in the semiconductor, electric vehicle, and battery plant sectors.

Supply chains constraints are still problematic and are only slowly recovering from legacy COVID-19 disruption, localized water shortages and Build America, Buy America Act restrictions - creating barriers to development.

Mechanical, engineering and plumbing (MEP) items are very difficult to procure and long-lead times exist for switchgear, albeit this isn't specific to the region. Nonetheless, fees are being expedited to lock-in delivery and early engagement and sourcing needs to be done on day one to secure many MEP components.

High demand is also making it difficult to obtain skilled labor in the Phoenix construction market, affecting the sequencing of trades and causing project delays. Premiums are being paid for non-localized workers, and contractors are competing more fiercely for talent by trying to outbid one another to acquire skilled labor. This has contributed to construction wages increasing by 4.8 percent between September 2022-23 in the state of Arizona.

As demand remains high and input costs prominent, escalation will likely transition lightly downward in 2024, compared to 2023, increasing between 3.0-5.0 percent. Moving into 2025, another shallow reduction in the pace of growth is expected, ranging between 2.5-3.5 percent.

Key price indicators

Movement (%)

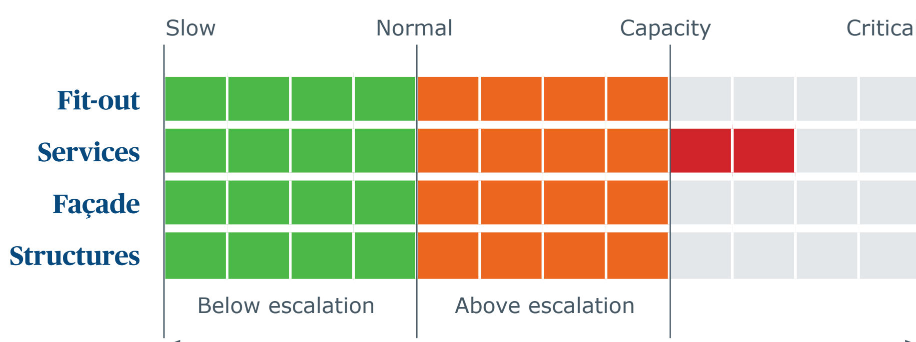
4.0%
Construction escalation YoY (2024)

3.7%
Inflation (CPI-U) MoY (Aug 2023)

10.4%
AZ Residential building permits by value QoY (Q3 2023)

3.4%
AZ unemployment rate (Sep 2023)

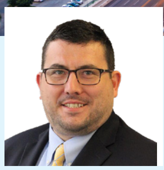
Figure 11: Supply chain capacity in Phoenix



Sources: Turner & Townsend, Bureau of Labor Statistics, Census Bureau

Houston

Oil and gas revenues strengthen real estate development



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Houston's construction market is positioned well. Spending in life sciences, hospitals and data centers is flowing into a steady stream of industry growth. The education sector is also benefiting from a growing population, with the Baylor College of Medicine's research building contributing to construction spending and the Fort Bend Independent School District now greenlit.

With that being said, the construction industry is not immune to capital expenditure reductions. The commercial sector, like in many other areas, is weak, vacancies are high and investment is shifting to smaller-scale projects and renovations rather than new builds. Strong inward migration, and affordable living costs, is helping stave off demand reductions in the residential market despite interest rates straining growth.

Given the buoyant market in Houston, supply chains stay stretched. The biggest constraint at the minute is the availability of permanent electrical transformers, which are experiencing approximately 60-week lead-in times. Even temporary transformers are facing lead-in times in excess of six months.

The labor market is also hot as demand remains healthy, and activity in the Austin and Dallas markets are pulling construction operatives away. This has caused average hourly construction wage rates in the state of Texas to increase at a healthy clip of 11.0 percent on the year in September 2023.

Escalation in Houston is higher than many other US markets owing to the greater level of localized demand. Growth in bid prices is expected to slow down and steadily transition to 3.5-4.5 and 3.0-4.0 percent in 2024 and 2025, respectively.

Key price indicators

Movement (%)

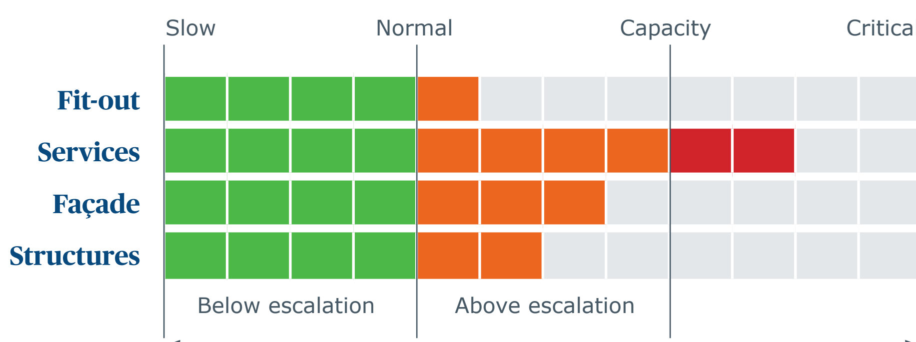
4.0%
Construction escalation YoY (2024)

2.7%
Inflation (CPI-U) MoY (Aug 2023)

1.6%
TX Residential building permits by value QoY (Q3 2023)

4.1%
TX unemployment rate (Sep 2023)

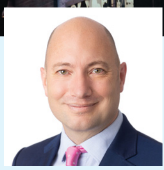
Figure 12: Supply chain capacity in Houston



Sources: Turner & Townsend, Bureau of Labor Statistics, Census Bureau

Nashville

A backbone of major projects is boosting both economic and construction sector growth



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The construction sector in Nashville remains strong compared to many other American locations as a resilient automotive industry supports growth. Residential demand is strong as the population continues to increase, and the commercial occupier sector is also being lifted by large tech firms looking to relocate into a growing, vibrant economy.

Major projects are seemingly driving the market forward as downtown activity lulls. Even with a healthy balance of mixed-use and commercial office projects underway, activity is slowing. Amicable tax rates have bolstered investment, yet unlocking backlogs of work is more dependent on financial viability than it once was.

Downtown’s softening may unlock capacity and bring down escalation. However, the Nashville market is less susceptible to price reductions than others. A tight labor market exists, with Nashville needing to compete with cities in close proximity for skilled operatives. As a result, wages and per diem cost have risen to attract talent.

One positive is that material costs have become more manageable, but persistent activity growth is contributing to stickier pricing. Concrete prices are quite high, with a limited number of batch plants in the market unable to cope with demand – although that is variable by structure and project complexity. Lead-in times are long in many areas, and mechanical equipment and electrical gear are in short supply.

While costs are not as high as they are in other American construction markets, bid prices are increasing above national rates as Nashville catches up with tier one cities. Escalation is expected to grow between 3.5-4.5 percent in 2024 and 2.5-3.5 percent in 2025.

Key price indicators

Movement (%)

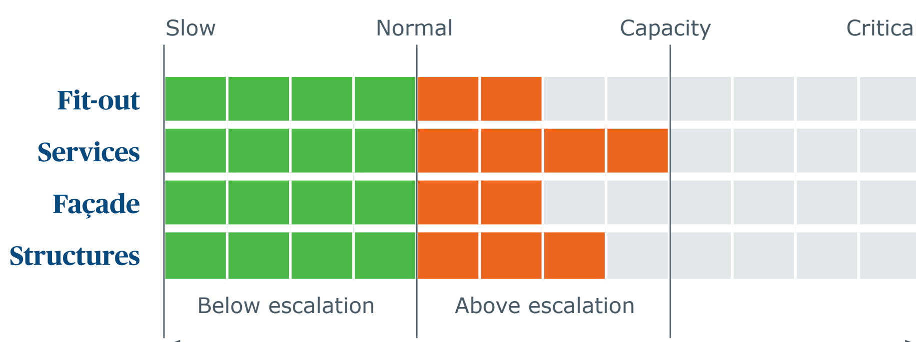
4.0%
Construction escalation YoY (2024)

4.2%
Inflation (CPI-U) MoY (Sep 2023)

31.9%
TN Residential building permits by value QoY (Q3 2023)

3.3%
TN unemployment rate (Sep 2023)

Figure 13: Supply chain capacity in Nashville



Sources: Turner & Townsend, Bureau of Labor Statistics, Census Bureau

Boston

Balanced market conditions buoyed by life sciences activity

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Despite a slowdown in the tenant improvement market, Boston's construction industry has been stable, propped up by growth in infrastructure, life sciences and pharmaceutical projects. Several blue-chip firms, that capitalized on the opportunity during the pandemic, also continue to invest in research and development hubs, helped by a good talent pool.

Logistics and warehousing in the greater Boston area remain strong as well, although this trend has invariably seen to a reduction in general retail real estate as consumption patterns move online. The residential market is also weakening and is suffering from high interest rates, cost of living concerns and prohibitive regulations.

The much-discussed office-to-lab conversions, which could boost the occupier sector, are also hitting stumbling blocks. Stretch energy codes to capture sustainability requirements are nudging projects into the unaffordable spectrum.

From a supply chain perspective, Boston is still experiencing long lead-in times and unreliable commitment dates for MEP equipment. Increased deposits have been requested to secure items; however, this may also be a result of poor cash flow, with insolvencies rising.

Capacity in other areas is also strained as fewer sub-contractors are operating in the market, feeding into smaller tender lists and less competitive pricing. Labor costs are mellowing as the average hourly construction wage in Massachusetts steadies to 5.5 percent on the year in September 2023.

A good level of base activity will hopefully ensure demand remains resilient and input cost are becoming more affordable. This feeds into escalation allowances, which are anticipated to soften to 2.5-3.5 percent in 2024 and 2.0-3.0 percent in 2025.

Key price indicators

Movement (%)

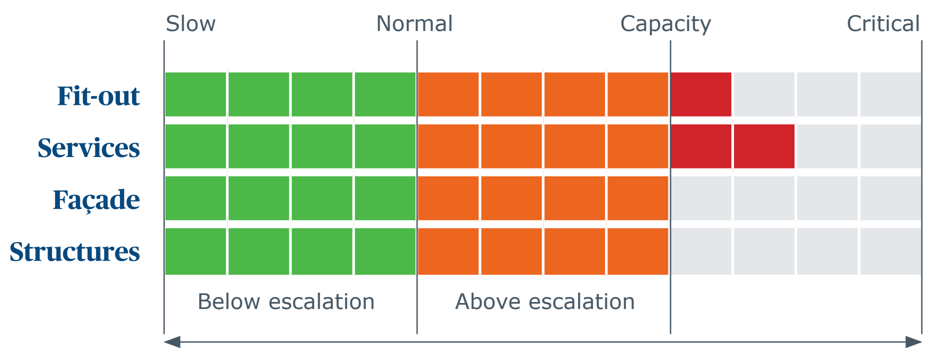
3.0%
Construction escalation YoY (2024)

2.6%
Inflation (CPI-U) MoM (Sep 2023)

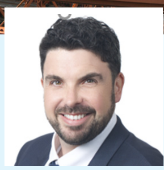
-11.9%
MA Residential building permits by value QoY (Q3 2023)

3.3%
MA unemployment rate (Sep 2023)

Figure 14: Supply chain capacity in Boston



Sources: Turner & Townsend, Bureau of Labor Statistics, Census Bureau



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New York

Broad sector coverage has helped the New York market to stabilize while pockets of growth persist

The New York construction industry has picked up pace over the past few months. A flow of larger schemes is coming to market and leasing activity appears to be improving. Encouragingly, office space is also getting some attention as firms encourage people back to work into grade A facilities.

In some instances, Local Law 97 – aiming to decarbonize the construction market - is causing an acceleration in development as clients and landlords look to get ahead of the curve. This policy, however, could be a double-edged sword. While accelerating development for some, the costs associated with conforming are unaffordable for others – particularly in a struggling residential market.

Overall, the market appears to be stabilizing from a demand side and also a supply side. There are no new additional supply chain concerns, but it is still best practice to look at pre-purchasing, especially for the mechanical packages – e.g., light fixtures and furniture, fixtures and equipment.

General contractors bidding practices are steady, yet competitive. Although some tension is being applied at sub-contractor level, and margins are being squeezed to compete with others who are looking to secure turnover as the market right-sizes.

Wages are settling as well, and average hourly construction earnings for the state of New York have softened to 4.0 percent in the twelve months to September 2023. This is feeding into steadier escalation growth, with bid prices expected between 2.5-3.05 percent on average in 2024 and similar levels in 2024.

Key price indicators

Movement (%)

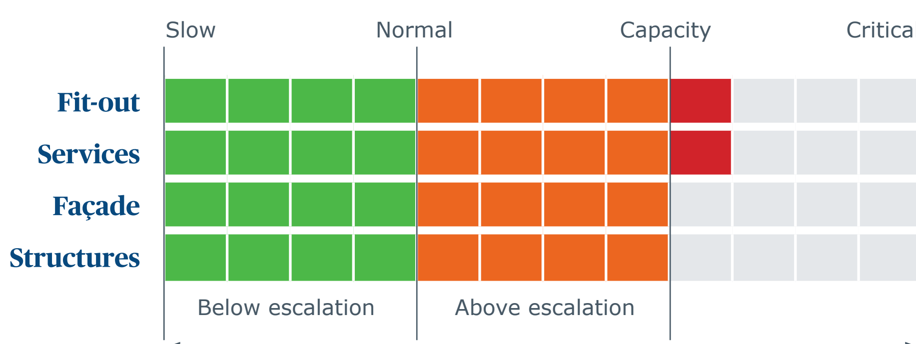
3.0%
Construction escalation YoY (2024)

3.7%
Inflation (CPI-U) MoY (Sep 2023)

-29.8%
NY Residential building permits by value QoY (Q3 2023)

3.9%
NY unemployment rate (Sep 2023)

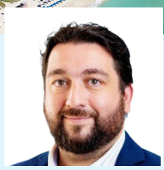
Figure 15: Supply chain capacity in New York



Sources: Turner & Townsend, Bureau of Labor Statistics, Census Bureau

Florida

Capital markets are slowing but demand remains robust



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Florida's construction market remains relatively buoyant but is tempered by contraction in capital markets and pressure on funding availability. Big investments are still being made, but are less speculative and more planned relocation or asset-driven as pressure on developer-led opportunities has led to some on-hold or distressed projects. The healthcare sector continues to thrive, and government investment in infrastructure is keeping order books for tier 1 contractors fulfilled. Further regional drivers such as the FIFA 26 World Cup and the Cricket World Cup are maintaining demand across sporting and hospitality facilities.

The current volume of major projects, while reassuringly plentiful, is not high enough to significantly challenge resources. Contractor engagement and competitive commercial tension are keeping bid/tender prices at market rates. This is being helped by the recovery of costs by general contractors across some materials and components, but it is anticipated that it will come under pressure, as the inevitable rush to complete works prior to major events start to take hold.

Not all materials costs are softening, however, and procurement has its difficulties. Switchgear and mechanical units are problematic to acquire. Asphalt and roofing products are also less available as supply recalibrates after hurricane season. Securing skilled labor continues to be an issue, with average hourly construction earnings increasing by 7.3 percent on the year to September 2023.

The availability and affordability of capital will remain a headwind for speculative projects and for organizations that are assessing their own needs, but demand remains solid and input costs manageable. As a result, construction escalation could rest between 3.5-4.5 percent in 2024 and drop further to 2.5-3.5 percent in 2025.

Key price indicators

Movement (%)

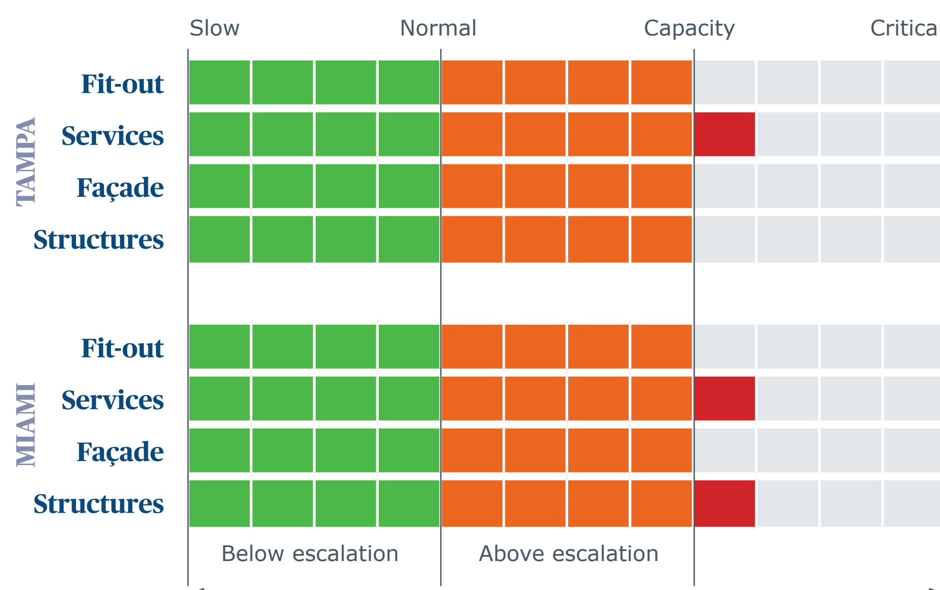
3.75%
Construction escalation YoY (2024)

6.7%
Inflation (CPI-U) MoY (Sep 2023)

11.8%
FL Residential building permits by value QoY (Q3 2023)

2.6%
FL unemployment rate (Sep 2023)

Figure 9: Supply chain capacity in Tampa and Miami



Sources: Turner & Townsend, Bureau of Labor Statistics, Census Bureau

Thought Leadership

Transforming supply chain performance to meet AI's data center demand

As technology rapidly evolves, artificial intelligence (AI) has emerged as a huge growth market, with a wide range of applications and even more unexplored potential. Our Data Center Cost Index 2023 shows that 88 percent of respondents reported a demand surge for data center capacity due to the rapid increase in AI/machine learning projects and their corresponding need for exponentially more computing capacity. For data center operators, a focus on improving the construction supply chain may be the competitive advantage they need to meet this unprecedented pressure.

In recent years, AI has become less the stuff of science fiction and more of an everyday reality, with an increasing array of real-world business applications, ranging from customer service and relationship management, to cybersecurity, accounting and inventory management. With seemingly limitless potential, this surging interest signifies a pivotal moment in the tech industry, as AI becomes more accessible to meet both business and individual needs.

The one real limitation is the availability of data centers to meet AI's cloud computing requirements.

> As a hugely profit-driven industry, the more cost efficiently data centers can be built, the better.

The need for data centers has never been greater and data center operators must strive to build faster to remain competitive. Until recently, the cost efficiency of building and operating data centers was improving steadily. Prefabricated and modular construction techniques, technological improvements and economies of scale all played a part in this. However, the COVID-19 pandemic increased material lead times, escalated energy prices and squeezed historically healthy margins from labor costs. This reversal corresponds with the recent increase in interest in and demand for AI. Now, in order for data centers to have an edge on the competition, they must be able to rapidly scale up and find ways to avoid passing those costs onto customers.

Within data center construction, every penny is being tracked and coded to understand how the next one can be built more efficiently - ultimately, the cost to build hits the bottom line. As a hugely profit-driven industry, the more cost efficiently data centers can be built, the better.

With so much beyond the control of data center operators, we have seen one area of relatively unexplored opportunity for making significant strides in improving operations: construction supply chain optimization.

Focus on functionality and strength of the supply chain

In the world of data centers, where every decision is scrutinized for return on investment, cost considerations often dominate the landscape. However, focusing solely on cost can lead to missed opportunities and long-term risks, and it is essential for data center operators not to underestimate the crucial role supply chains play in their success. During the construction of data centers, their operators should shift perspective and focus on functionality

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and strength of the supply chain to prevent unnecessary costs and mitigate potential risks to schedule.

Data center construction is a unique endeavor, constantly challenged by rapid technological advancements in equipment and IT infrastructure. Innovations such as new cooling technologies, lithium-ion batteries, and alternative energy sources such as solar and 5G network adaptation can all disrupt project delivery.

We have identified three key ways that data center operators can transform supply chain performance to better accommodate these changes:

Utilize supplier performance data to inform procurement decisions and diversify supply base

It may be tempting to work with the same suppliers repeatedly, but convenience should never be confused with efficiency. Familiarity doesn't necessarily equate to strong performance. Data center operators would be wise to consider implementing a pay-for-performance approach to drive the highest quality standards and reflect the dynamism of the industry. Setting KPIs to consistently measure suppliers against the four fundamental pillars of project delivery - cost, schedule, quality and safety - will provide data that can be used to benchmark suppliers and identify trends over time.

Accurate, current and trended performance data can alert you to recurring issues (for example where schedules slip and costs increase compared to the plan), and bring to light the pain points, weaknesses and gaps in your supply chain. With this data in hand, you can undertake a sourcing effort to expand your network in a way that proactively mitigates risk.

With fierce competition across the sector for the same services, components and equipment, diversifying your supplier base also helps avoid a single point of failure. If your primary equipment supplier experiences production issues, having a secondary supplier already identified and integrated into your supply chain should allow you to pivot without major disruptions.

Optimize resource allocation with capacity planning and demand forecasting

The push for data center market growth means that both labor and product shortages are a high-risk probability, making real-time insights into local market intelligence essential. Advanced supply chain data analytics provide these insights, and demand forecasting can support efficient capacity planning with your vendors. For example, if you proactively analyze the demand plan and match it against forecasted labor supply in your areas of construction then any gaps identified can be mitigated early to reduce the supply risks from labor shortage.

The same process can be applied for equipment or materials. For specific equipment and components, forecasting can also help you negotiate volume discounts or bulk pricing if you're confident that your demand aligns with the vendor's capacity.

Plan for the unknown with scenario simulations

The dynamic nature of the data center industry demands proactive planning. Scenario modeling simulations allow data center operators to assess the impact of alternative sourcing strategies, evaluate potential schedule and cost deviations and make informed decisions. These predictive methodologies can empower owners to negotiate with a comprehensive understanding of the potential cost implications of various contract terms. When new opportunities arise - such as the opportunity to acquire land, simulations can help forecast the availability and timelines for long-lead equipment, enabling you to reroute materials as needed.

As the demand for data centers continues to surge in response to AI and machine learning, data center operators must find ways to stay ahead of the competition. One of the most impactful strategies is supply chain optimization—an area where our extensive experience uniquely positions us to advise. By working with a partner like Turner & Townsend and leveraging our expertise in data-driven approaches, data center operators can reduce costs, mitigate risks, and maintain a competitive edge in this rapidly evolving landscape.

Reading the data

In the regional update section, we analyze the construction market across several locations in the US. In doing so, we explore multiple economic indicators, as well as the supply chain capacity within a typical building project.

Key performance indicators

Metric	Description	Source
Construction escalation	This measures the trend of contractors' pricing level in accepted bids, i.e., cost to the client.	Turner & Townsend
CPI-U	The Consumer Price Index for All Urban Consumers (CPI-U) is a monthly measure of the average change over time in the prices paid by consumers for a market basket of consumer goods and services.	Bureau of Labor Statistics
Residential building permits	National, state, and local statistics on new privately-owned residential construction.	Census Bureau
Unemployment rate	The unemployment rate represents the number of unemployed people as a percentage of the labor force (the labor force is the sum of the employed and unemployed).	Bureau of Labor Statistics

Supply chain capacity

Metric	Description
Above escalation	In normal market conditions, a supply chain which has capacity would be more competitive in their pricing strategies in order to secure work. As such, price increases are offset by the desire of the supply chain to secure work which leads to price increases below escalation.
Below escalation	In normal market conditions, a supply chain which has limited capacity would be less competitive in their pricing strategies when bidding for new work. As such, price increases are exaggerated since there is little supply of labour to execute the work. This leads to price increases above escalation.

Construction descriptors

Metric	Description
Fit-out	Construction work associated with interior trades i.e. drywall, flooring, wall and ceiling finishes and millwork.
Services	Construction work associated with plumbing, HVAC, electrical, lighting, fire safety and communications work.
Façade	Construction work associated with envelope and roofing work.
Structures	Construction work associated with below grade and above grade structural concrete, steel or lumber work.

About Turner & Townsend

Turner & Townsend is a global professional services company with over 10,700 people in 48 countries. Collaborating with our clients across real estate, infrastructure and natural resources sectors, we specialize in major programs, program management, cost and commercial management, net zero and digital solutions.

We are majority-owned by CBRE Group, Inc., the world's largest commercial real estate services and investment firm, with our partners holding a significant minority interest. Turner & Townsend and CBRE work together to provide clients with the premier program, project and cost management offering in markets around the world.

We are passionate about making the difference, transforming performance for a green, inclusive and productive world.

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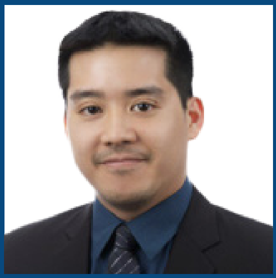

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