Q4 2022 REPORT

U.S. Construction Trends and Outlook

Detailed cost escalation estimates across U.S. markets and property types

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Table of Contents

Introduction & Summary of Findings

Construction costs remain elevated amid economic uncertainty

Despite easing supply chain conditions and weakening economic fundamentals, the U.S. construction industry still faces significant pressure on costs in 2023.

After a tumultuous environment following the onset of COVID-19, prices for labor and key materials spiked due to intense labor shortages and global supply chain disruptions. Rising demand for new construction across many asset classes added fuel to rising construction costs.

The first three sections of this report dissect the underlying components of total construction costs—margins, labor and materials—and identify how these factors are driving current construction cost inflation. The fourth section of this report presents TCC/CBRE's New Building Cost Index (NBCI), which tracks how the three underlying cost components have trended over time and aggregates them into a comprehensive forecast of cost inflation for the construction of new buildings. The NBCI also includes comparisons across five core property types (office, industrial, healthcare, life sciences and multifamily) and 23 major U.S. markets.

The final section of this report includes market profiles for each of the 23 U.S. markets, including local insights, the components of cost trends in those markets, and ultimately what to expect for cost.

Throughout this report, the reader will also find key insights from local general contractors and development managers to provide deeper and more precise estimates of how the sector has fared in recent quarters and where it is headed over the next two years.

Unless otherwise noted, this report includes data through December/Q4 2022, with surveys, interviews and analysis performed during the first quarter of 2023.

Summary of Key Findings

+12.9% ▼ Cost Growth over the Past Year
TCC/CBRE New Building Cost Index
% Change Q4 2021-Q4 2022
Previous Quarter = 13.6%

+2.7% ▲ Forecast for Cost Growth Next Year
TCC/CBRE New Building Cost Index
% Change Q4 2022-Q4 2023
2015-2019 Average = 2.4%

+3.5% ▼ % of NRA Under Construction
As of Q4 2022
Multifamily, Office and Industrial Total
Previous Quarter = 3.6%

+5.6% ▲ Labor Cost Growth Last Year
CBRE Modeled Labor Cost Index
% Change Q4 2021-Q4 2022
Previous Quarter = 5.3%

+17.1% ▼ Materials Cost Growth Last Year
CBRE Modeled Materials Cost Index
% Change Q4 2021-Q4 2022
Previous Quarter = 20.3%

Arrows indicate change from previous quarter / historic average

	Margins & Construction Activity +	Materials & Equipment Costs +	Labor Market Dynamics =	Overall Construction Costs
Overview	When construction activity and spending spikes, suppliers and contractors will increase their bid prices to meet the growing demand. Investment in both new residential and non-residential construction began increasing rapidly in 2021 and growth continued through the end of 2022. This rise in investment is mirrored in the historically high amount of sq. ft. under construction. Industrial and multifamily are the most active property types, while office development has slowed substantially. Builders are most active in Sun Belt and high-tech markets.	The surge in activity also put upward pressure on materials and equipment costs, and the situation was exacerbated by supply chain disruption and labor shortages. This also meant longer lead times for key construction materials, which disrupted project schedules. While the supply chain situation has generally improved, contractors are still facing shortages for many key materials, especially for electrical components and switchgear. Price inflation for most materials slowed and some material prices even fell in late 2022 (e.g. lumber and steel).	Construction hiring and job openings soared in late 2021 and 2022, but quickly the pool of available labor dwindled, and employers have struggled to find skilled and experience workers. With construction unemployment at an all-time low and wage growth soaring in other sectors of the economy, wage pressures intensified, especially for non-union positions that tend to more closely resemble overall private-sector trends. Union contracts are often negotiated in cycles, so it can take some time for union wages to match the rest of the market.	CBRE and TCC developed a model that incorporates data from all three cost factors to aggregate, estimate and forecast the cost inflation that builders will face in the coming years. The New Building Cost Index (NBCI) is a comprehensive data series for construction cost escalation, including estimates for five key property types and 23 U.S. markets. The NBCI shows that the construction cost inflation rate peaked in Q3 2022 and began slowing to end the year but remains well-above the pre-pandemic pace.
Outlook	Sentiment and key leading indicators convey mixed signals for future activity. High backlogs should sustain building activity in the near term, but architectural bookings are beginning to slow, which implies the pipeline will slow for builders. Roughly half of contractors surveyed expressed concerns about an insufficient pipeline over the next three months and think this will impact their bargaining power. A lot will depend on macro forces in the economy and real estate sector. Strong fundamentals for industrial, life sciences and multifamily should sustain building activity in the coming year, but higher interest rates and a weakening economy will likely limit construction financing and result in some slowing of activity.	Contractors generally felt that cost inflation, material shortages and lead times will come down as supply chains normalize and demand slows. But electrical, HVAC and equipment were categories in which contractors were most likely to anticipate longer lead times in the next three months. A lot will hinge on the success and terms of U.S. trade and industrial policies, as well as global conflicts and public health. Metal products and electronics are the most likely categories to hinge on policy as the U.S. attempts to diversify its trade partners while increasing domestic production. The Russia-Ukraine war and building U.S.-China trade tensions are also critical trends to watch in 2023.	Only a small share of contractors thought that labor tightness would improve in the coming three months, which means hiring challenges and rising wages should continue in the near-term. In most U.S. markets, wage growth is expected to accelerate in 2023 due to the lack of available labor. Lagging union wages are also likely to catch up to non-union growth in 2023 which will further increase costs, especially in coastal and Midwest markets with high union coverage. If project activity cools later in the year, it may provide some relief to the tight labor market, but infrastructure spending and demand for industrial product may keep things tighter.	Costs are expected to continue rising each quarter for the next two years, but the pace of growth is expected to slow substantially and return closer to pre-pandemic growth levels by the end of 2024. NBCI growth for in-demand sectors like industrial and life sciences will be stickier than other product types, and it will take longer to return to pre-pandemic rates of cost growth in these sectors. Cost growth is also expected to be slightly higher in Southern markets where builder demand should stay elevated due to faster growing economies and populations in those markets.

01

Construction Activity & Margins

Margins have been growing more quickly than the other major cost components

Property types with less construction spending and overall activity in recent quarters (e.g. office) have had margins grow more slowly than more active property types (e.g. industrial).

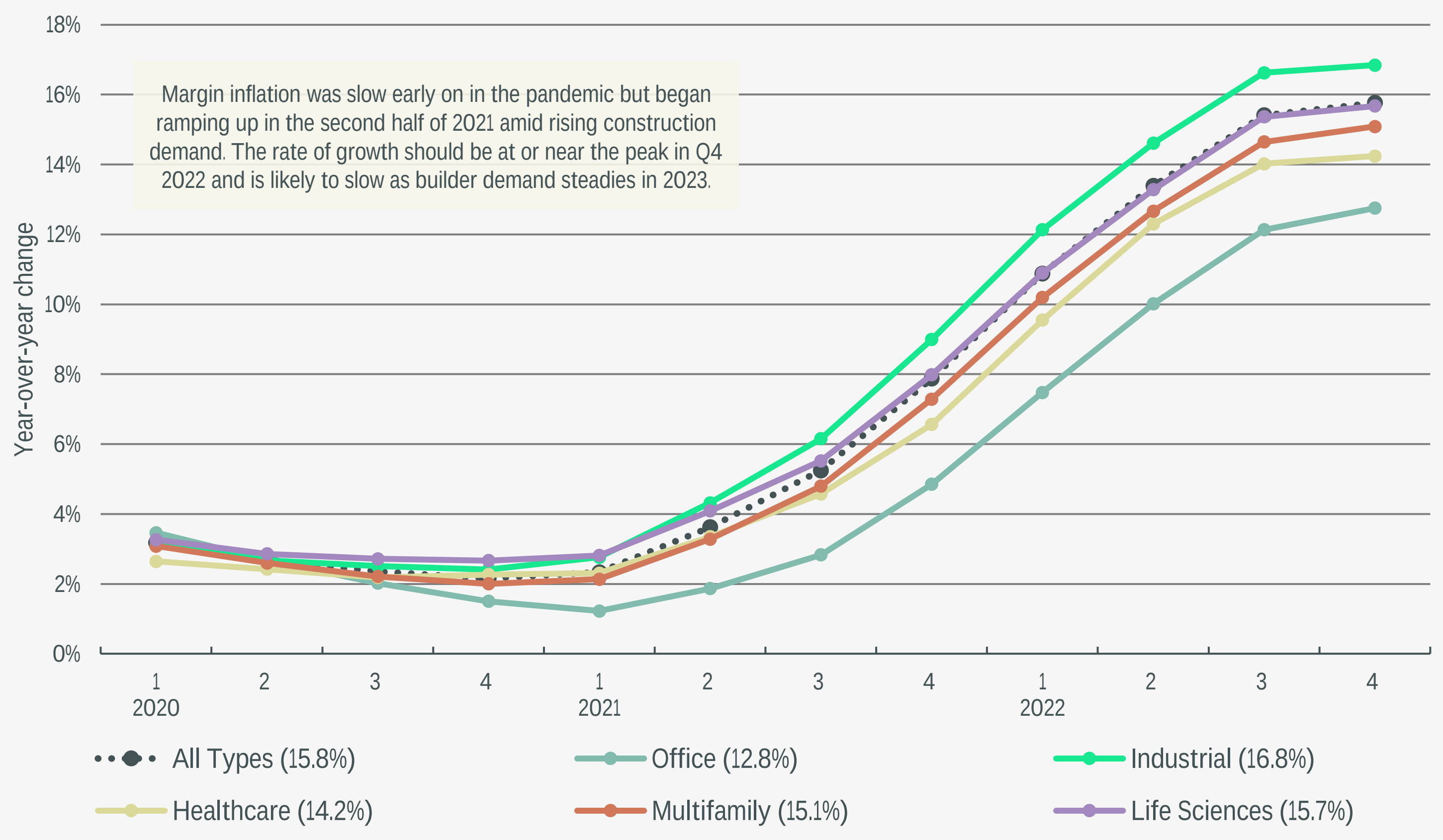
CBRE estimates margins using data on construction spending, real private fixed investment and the amount of construction activity underway. Margins represent the difference between the cost of providing construction-related goods and services and the bid price received (i.e. profit). As demand grows and developers spend and build more, contractors and suppliers have more bargaining power to push bid prices and raise their margins.

In recent months, nonresidential investment and development has outpaced residential, as rising interest rates have had a more direct impact on the for-sale housing market (see Figure 1.3 on the next page). Year-over-year growth rates for real private investment in new construction began slowing for all product types (except multifamily) in mid-2022, but as of year-end 2022, growth was still in the double digits. Investment growth for multifamily had been slower than for commercial and manufacturing but continued to steadily accelerate throughout 2022.

Pressure on margins can vary substantially by market, as development activity (relative to both the size of the market and to historic norms) differs. Modeled margins pressure is at its COVID-era peak in nearly all target markets, but it is expected to cool across most markets in 2023.

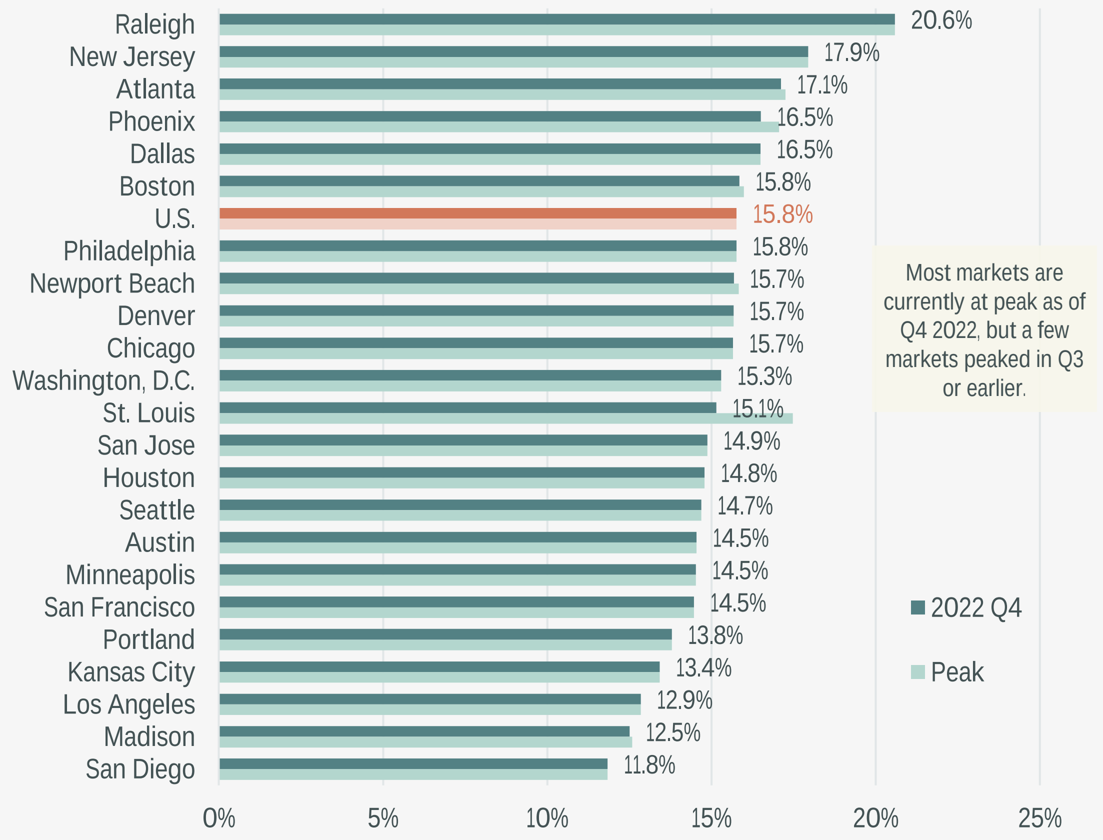
The following pages detail how construction investment, spending and activity have varied across markets and property types.

FIGURE 1.1: Year-over-year change (%) for CBRE modeled margins estimates by property type



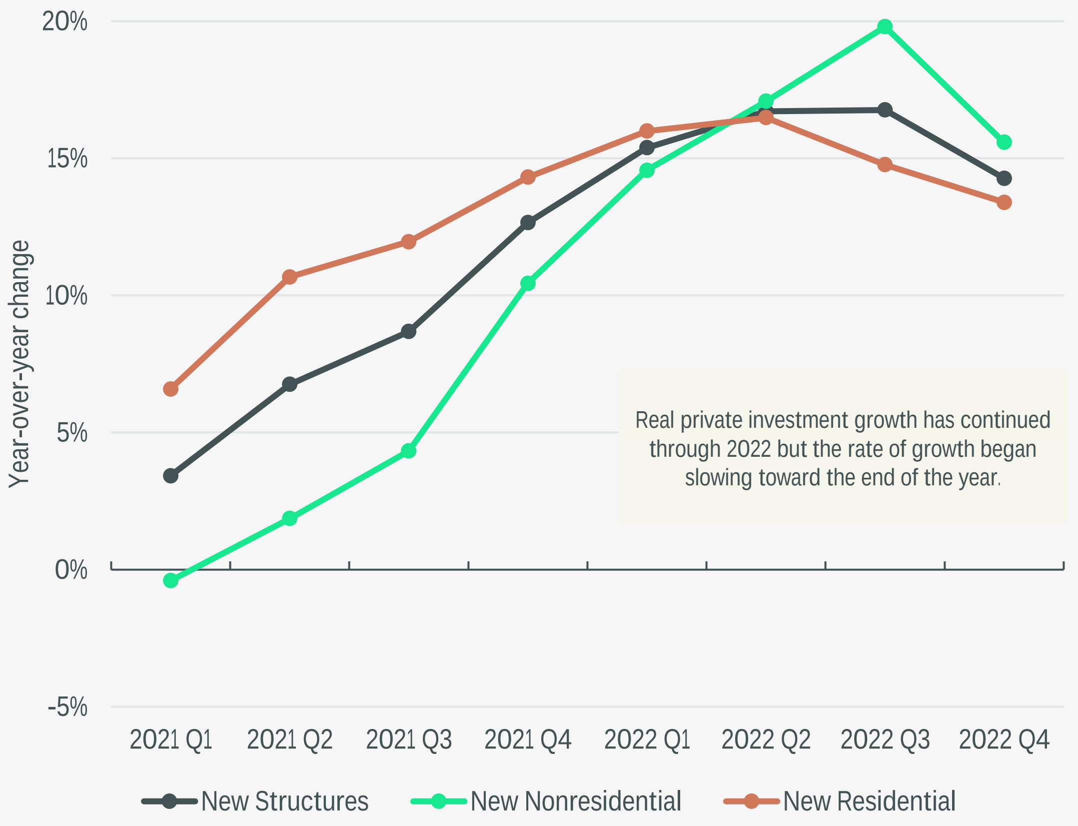
Note: Please see appendix for more details on how various index measures are constructed.
Source: Bureau of Labor Statistics, Bureau of Economic Analysis, CoStar Group, Oxford Economics, CBRE Strategic Investment Consulting, Q1 2023.

FIGURE 1.2: Year-over-year change (%) in CBRE modeled margins estimates by market, current quarter vs. peak growth rate since COVID-19



Note: Margins shown here are an average of all property types
Source: Bureau of Economic Analysis, CoStar Group, CBRE Strategic Investment Consulting, Q1 2023.

FIGURE 1.3: Year-over year change (%) in Real Private Fixed Investment in new construction by type



Source: Bureau of Economic Analysis, CBRE Strategic Investment Consulting, Q1 2023.

Construction spending growth has slowed after a surge in 2021

Spending on industrial and health care have sustained, but residential (including multifamily) spending slowed more dramatically in late 2022.

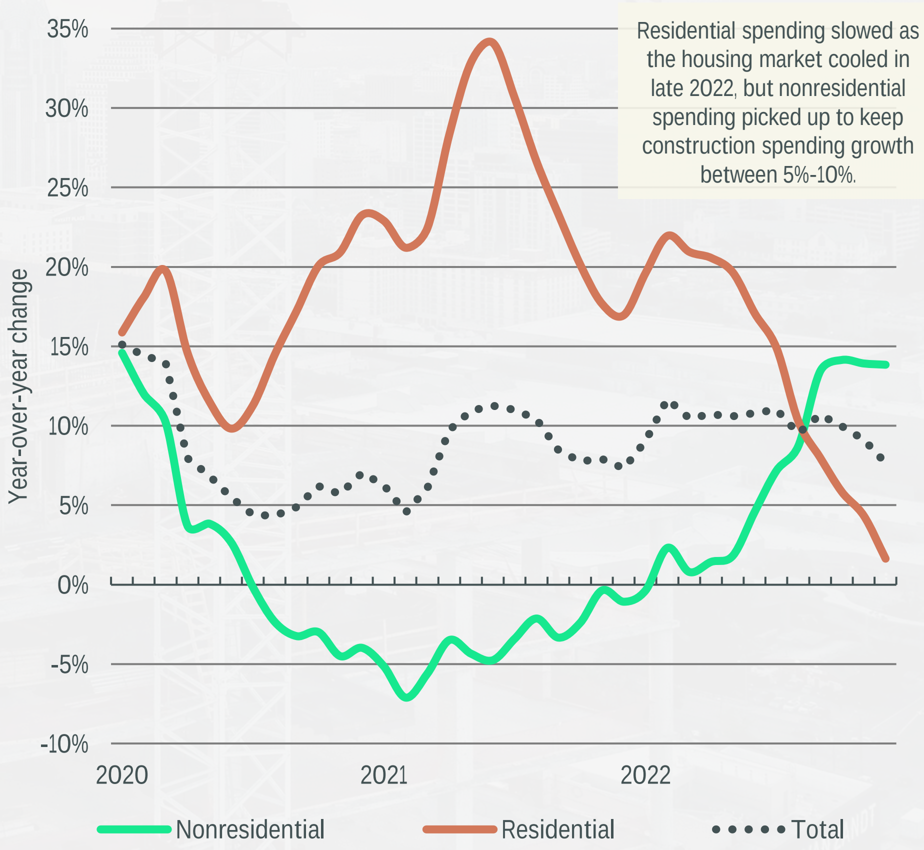
Year-over-year total construction spending growth in 2022 was roughly on pace with 2021, but around mid-year, nonresidential spending growth accelerated while residential spending trended to nearly flat growth.

Despite the ongoing shortage of housing driving a need for more building, the recent rise in mortgage interest rates has curbed for-sale pricing growth and buyer demand overall. Additionally, rising interest rates and general concerns in the capital markets have made it more difficult for builders to secure financing for new construction.

A large construction backlog (see page 12) is helping drive nonresidential construction spending growth. Demand for warehouse and manufacturing space is also making development of these assets more attractive, driving spending growth in these segments.

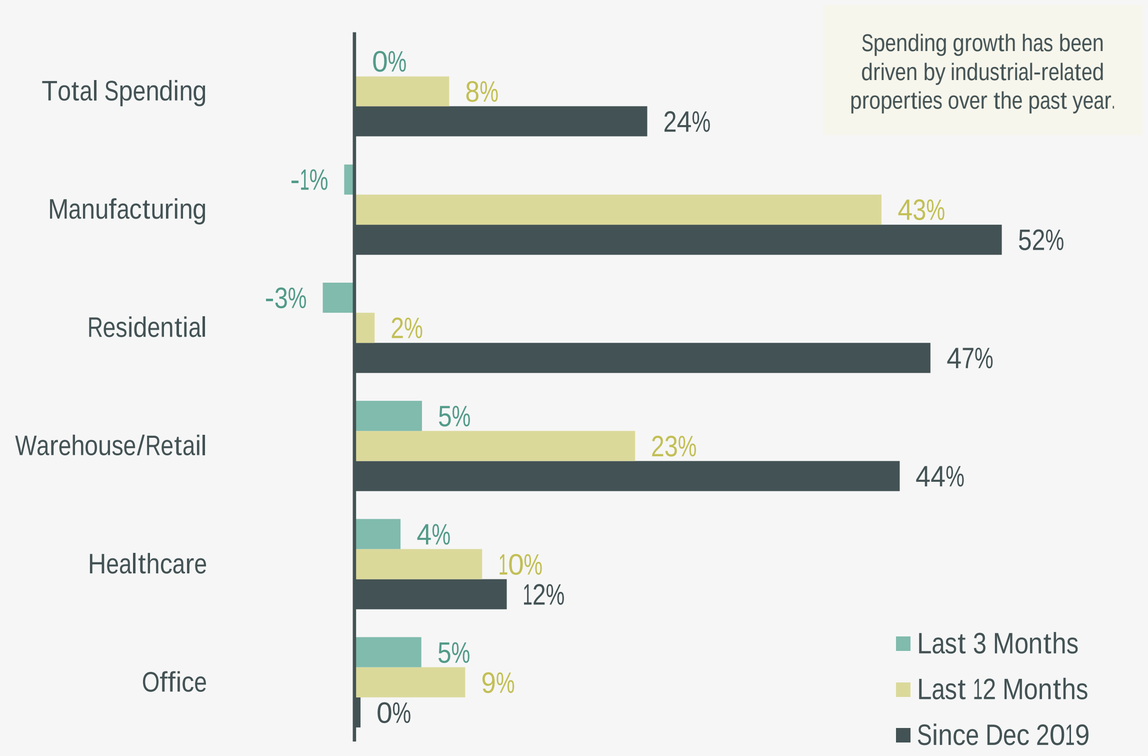
The American Institute of Architects' (AIA) consensus forecast expects more strong spending growth in the nonresidential sector through 2023 before slowing in 2024. Industrial and health construction spending are expected to grow most rapidly in 2023, while the challenged office sector is likely to see spending decline over the next two years.

FIGURE 1.4: Year-over-year change (%) in monthly construction spending



Note: Data shown through Dec 2022, seasonally adjusted. Residential includes multifamily.
Source: U.S. Census Bureau, CBRE Strategic Investment Consulting, Q1 2023.

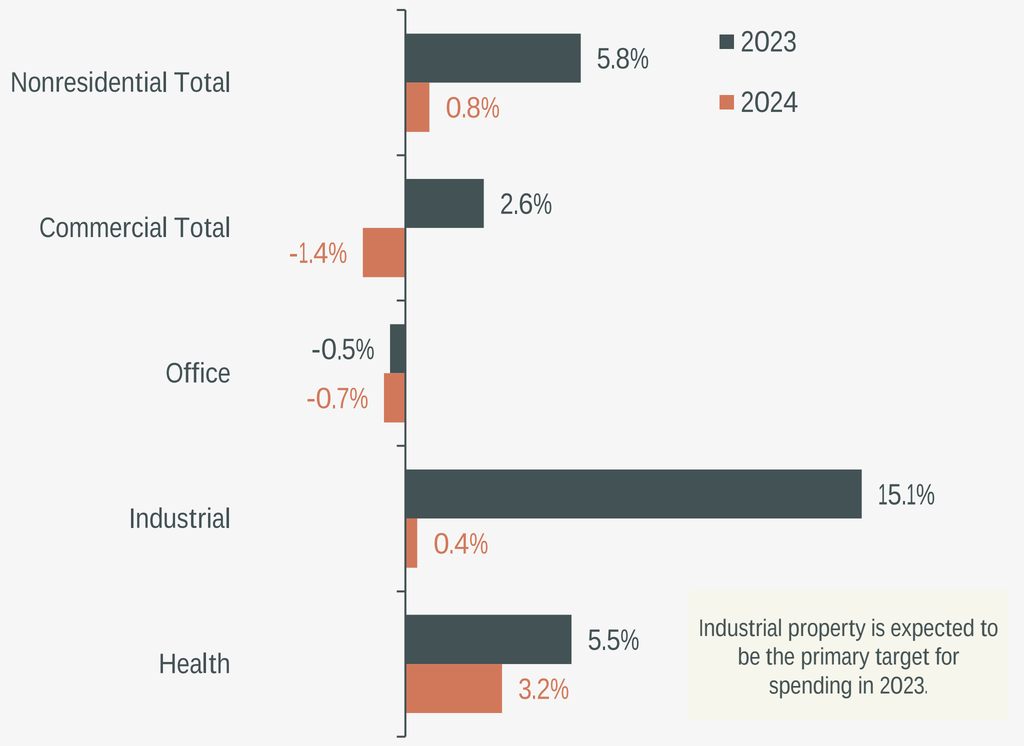
FIGURE 1.5: U.S. monthly construction spending change (%) since the pandemic by property type



Note: Data shown through Dec 2022, seasonally adjusted. Residential includes multifamily.

Source: U.S. Census Bureau, CBRE Strategic Investment Consulting, Q1 2023.

FIGURE 1.6: AIA Consensus Construction Forecast, annual spending change (%) by sector



Source: AIA, CBRE Strategic Investment Consulting, Q1 2023.

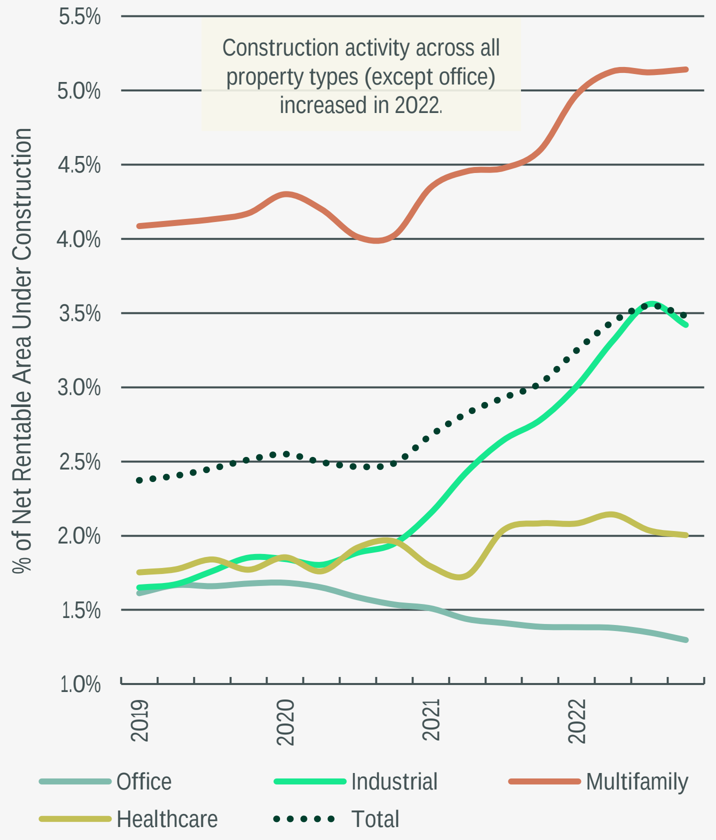
Construction activity is beginning to plateau after a two-year climb

In terms of total inventory actively underway, all product types are flat or slowing through the end of 2022.

Multifamily construction is the most active at the end of 2022, but the share of inventory under construction has been elevated and climbing since the mid-2010s. Industrial construction activity growth was most dramatic over the last few years, climbing from 1%-2% before the pandemic to more than 3% of inventory actively underway in 2022.

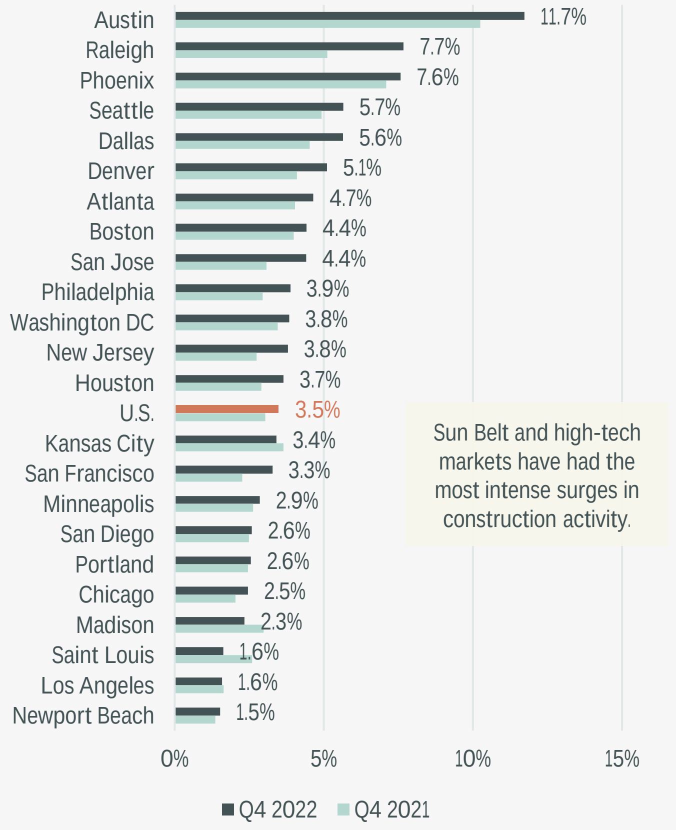
The level of activity varies quite dramatically across markets, but most are at or near their peak in the last few years. Most markets are dominated by industrial construction which has been in high demand virtually everywhere in the U.S.

FIGURE 1.7: Share of inventory actively under construction by property type



Data shown through Q4 2022.
Source: Costar Group, CBRE Strategic Investment Consulting, Q1 2023.

FIGURE 1.8: Share of total inventory actively under construction by market



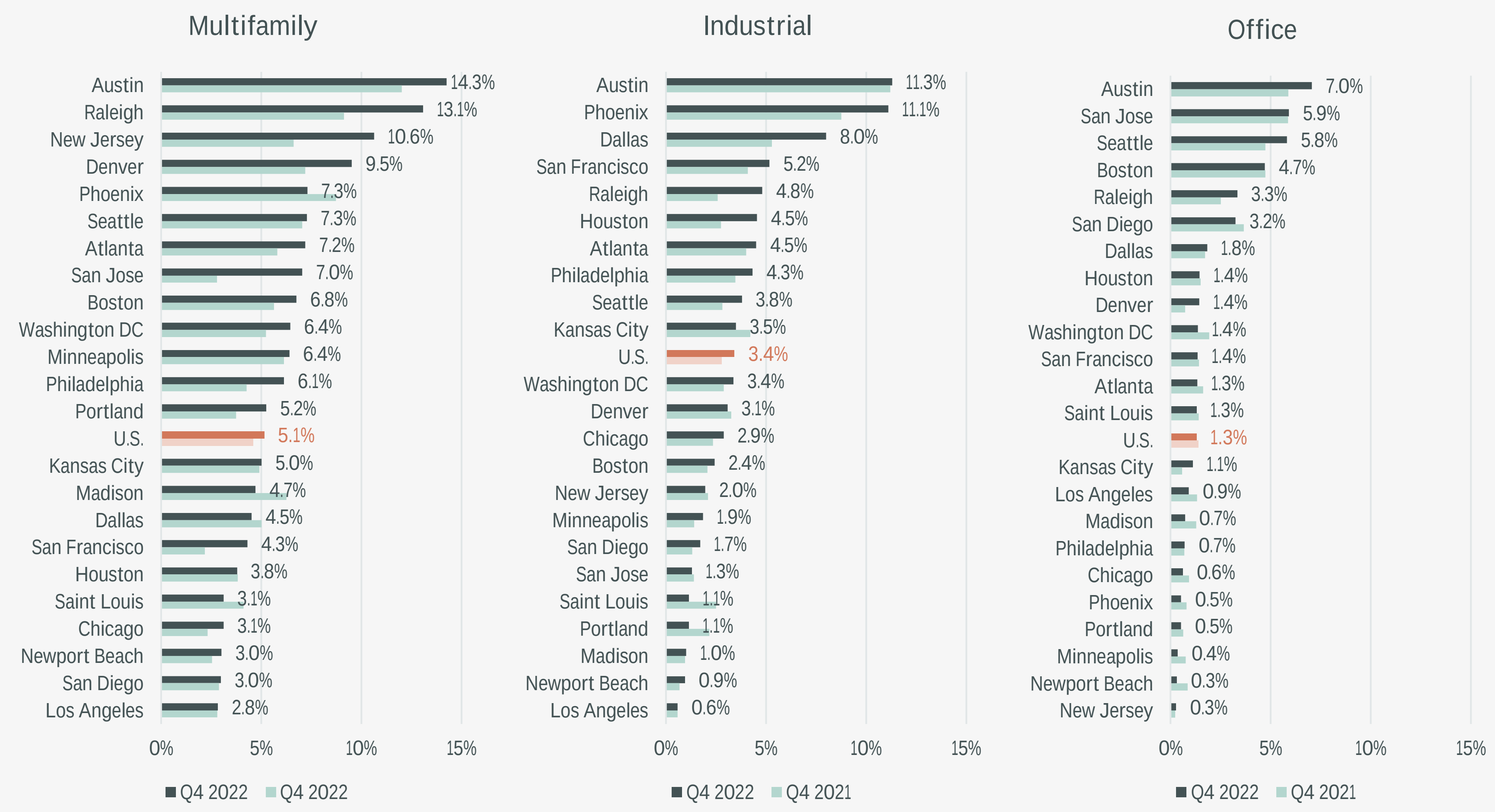
Note: Includes only office, industrial and multifamily
Source: Costar Group, CBRE Strategic Investment Consulting, Q1 2023.

Construction remains most elevated in Sun Belt and high-tech market.

Notable Sun Belt markets that have a strong or growing tech or life sciences presence include Austin, Atlanta, Raleigh, Dallas and Phoenix. Other notable tech and life sciences markets like Denver, Seattle, San Jose and Boston are centers for activity across property types.

Notable exceptions to this trend are the Southern California markets of Los Angeles, Newport Beach and San Diego. Multifamily and industrial development remains especially slow in these markets, though the industrial occupiers benefit from growth in the nearby Inland Empire. Residential fundamentals are strong in these markets, but regulatory and land costs generally restrict the volume of development activity, especially for residential and industrial projects.

FIGURE 1.9: Share of inventory actively under construction by market and property type



Source: Costar Group, CBRE Strategic Investment Consulting, Q1 2023.

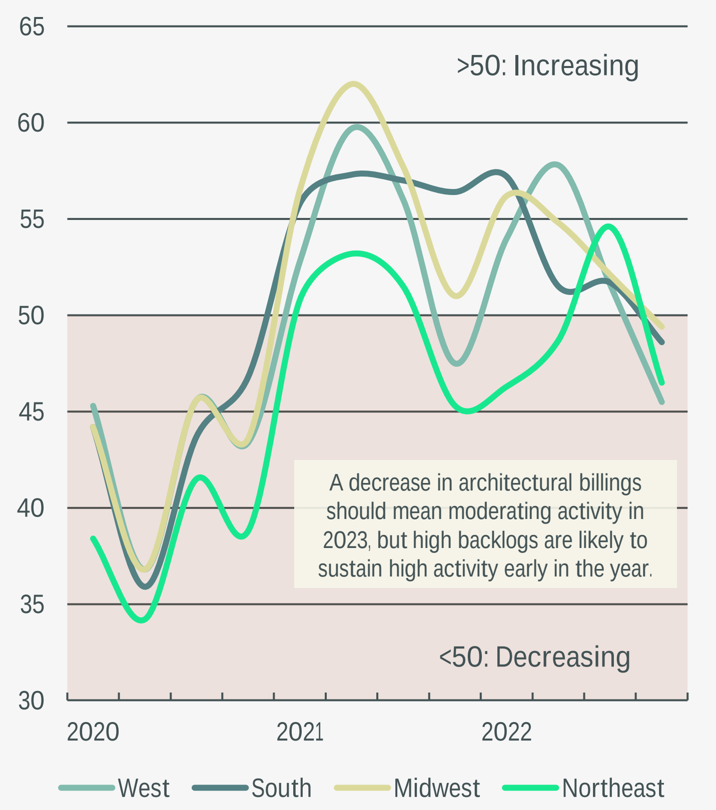
Stable backlogs indicate healthy construction demand, but architectural billings point to a potential future slowdown

ABC's Construction Backlog Indicator has increased (in months of backlog) since the end of 2021 in all U.S. regions except the West.

Backlog increased dramatically for heavy industrial construction, which was up 1.8 months from Q3 to Q4. The demand for manufacturing and distribution facilities has driven construction activity in this sector. Backlog tends to lag the broader economy and the effects of increased borrowing costs, labor shortages and slowing overall economic activity in the coming quarters are likely to curb the backlog later in 2023.

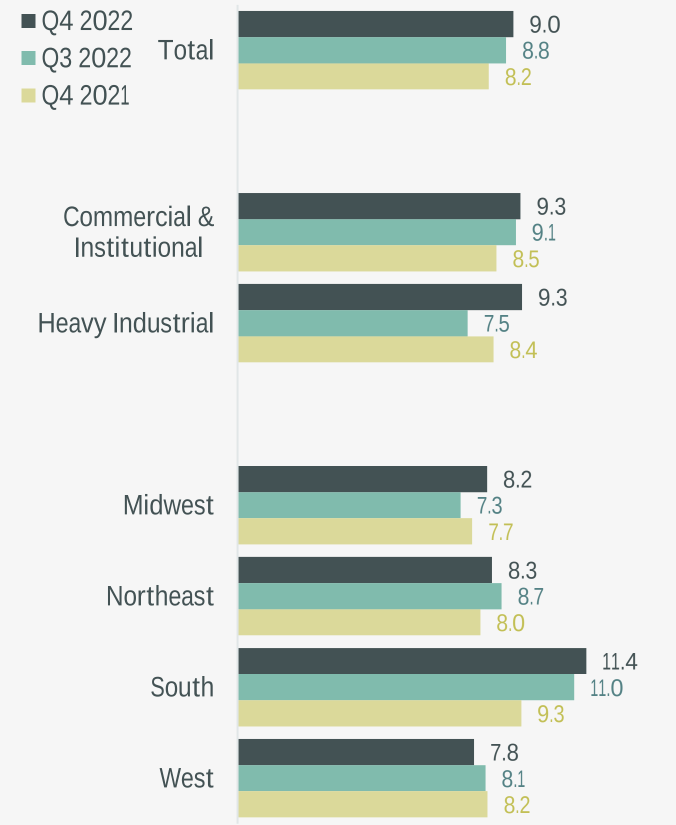
The AIA Billings Index (ABI) provides one forward-looking measure of construction activity, since design and architectural work tends to lead building activity by about one year. The ABI fell sharply in Q4 2022 in all U.S. regions, though less dramatically in the South and Midwest. This reinforces that backlogs are likely to ease in 2023 barring a rebound in the ABI.

FIGURE 1.10: AIA Architectural Billings Index by region since pandemic onset



Note: Data is a three-month moving average.
Source: American Institute of Architects, CBRE Strategic Investment Consulting, Q1 2023.

FIGURE 1.11: ABC Construction Backlog Indicator (months) by region and type



Note: Data is a three-month moving average.
Source: Associated Builders and Contractors, CBRE Strategic Investment Consulting, Q1 2023.

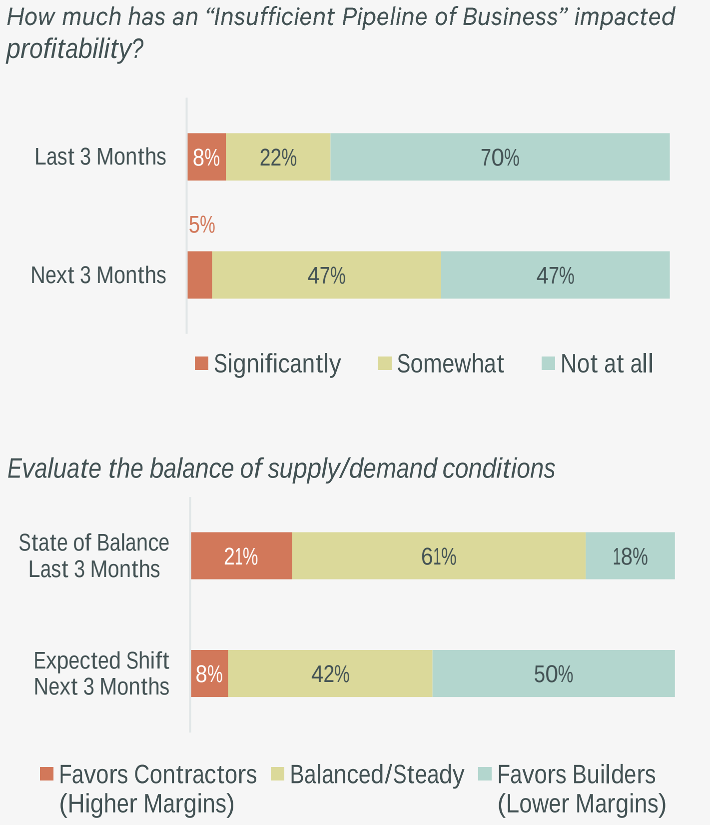
Builders remain confident in sales expectations but sentiment is shifting for contractors

ABC's Construction Confidence Index shows that builders and contractors are still seeing conditions improve for profit margins **and sales expectations, but TCC/CBRE's recent Contractor** Survey shows rising concern regarding the future business pipeline.

A large majority of contractors surveyed by TCC/CBRE indicated that an insufficient pipeline of business has not been an issue over the past 3 months, but when asked about the next 3 months, more than half thought that it would impact profit margins. Contractors also noted that supply and demand of construction services was largely balanced, meaning neither builders nor contractors had a significant advantage when it comes to pricing and profit margins.

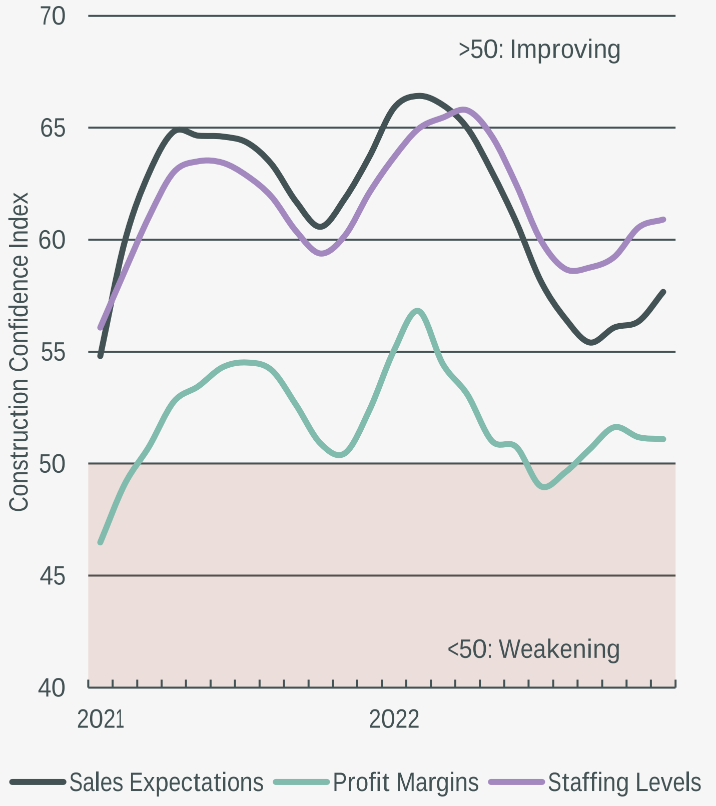
This picture was generally reflected in the recent ABC Construction Confidence Index, which showed that profit margins were fairly balanced (neither improving nor weakening). CBRE's survey showed that contractors expect this balance to shift generally toward builders in the next three months, due in large part to softening pipeline expectations.

FIGURE 1.12: TCC/CBRE Contractor Survey



Source: Various Contractors, CBRE Strategic Investment Consulting, March 2023.

FIGURE 1.13: ABC Construction Confidence Index by operating segment



Note: Data is a three-month moving average.
Source: Associated Builders and Contractors, CBRE Strategic Investment Consulting, Q1 2023.

Margins are impacted by the overall health of the economy, capital markets and real estate sector

FIGURE 1.14: Key factors and outlook for construction activity and margins

FACTOR	CURRENT PICTURE	INFLUENCE ON CONSTRUCTION OUTLOOK
State of the Economy	U.S. GDP declined during H1 2022, mainly due to volatile factors. Although H2 2022 saw a return to growth, underlying domestic demand is weakening, which will likely give way to a moderate recession this year. On the downside, the Fed is forced to tighten even more than anticipated, which would trigger a deeper recession. On the upside, inflation unwinds whilst the labor market remains stable.	Construction activity tends to lag economic cycles, meaning construction is unlikely to slow down substantially in response to economic conditions in the near-term. If the recession is short and mild enough, it may have little to no impact on activity in the medium term, but if the recession lingers, it will likely begin to impact activity in late 2023 into 2024.
Capital Markets and Interest Rates	The Fed hiked rates by 25 basis points at its February meeting and stated further tightening is necessary. CBRE expects the Federal Funds Rate should end the year in the upper-4% range. U.S. equity markets are grappling with the Fed's intention to aggressively fight inflation and weaker earnings reports for U.S. corporations. Debt markets are struggling to gauge the volatile environment.	Interest rates on construction loans are rising and lenders are tightening, meaning it will be more costly and challenging to finance construction projects. Construction lending originations have remained fairly active, but slowing investment sales activity will likely impact valuations and begin to deter some developers and lenders.
Real Estate Market Fundamentals	Very strong fundamentals within the industrial and life sciences sectors will support rent growth, but soft office fundamentals and the resilience of virtual work will make office fundamentals more vulnerable to an economic slowdown. The multifamily story is quite nuanced. Although employment and household growth will be weaker than other real estate demand drivers, limited multifamily inventory and slowing homeownership growth will keep fundamentals tight.	Negative expectations for the office sector will drive increases in cap rates, resulting in value losses and negatively impact underwriting of new construction. Meanwhile, the multifamily, industrial and life sciences sectors will see more moderate cap rate decompression, driven by sturdier fundamentals and NOIs. Underlying fundamentals will vary from market-to-market, which will drive disparities in demand for new construction across geography.

Source: CBRE Strategic Investment Consulting, Q1 2023.

02
Materials, Equipment & Supply Chains

Logistics issues have improved but supply chain impacts are lingering

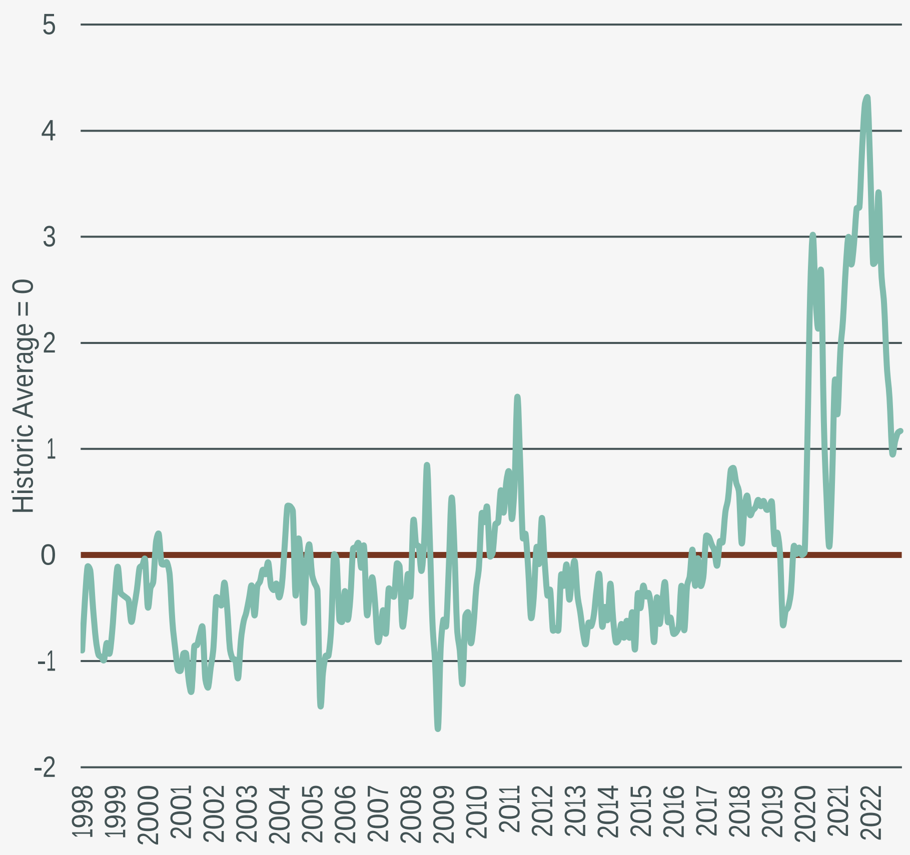
Shipping queues, freight rates and slowing demand indicators point to a more stable supply chain environment in 2023, but several issues linger including global political turmoil and a labor crunch.

The general freight trucking price index—a general measure of domestic logistics costs—finally began to slow its pace of growth and even started coming down in 2022. However, freight prices remain 30% higher than they were before the pandemic, and labor tightness and fuel prices are hindering further cost control.

In response to supply chain challenges, many producers and distributors are exploring options for supply chain diversification, including bringing sources closer to facilities. Domestic production and nearshoring of the supply chain may have implications for construction demand from the industrial and logistics segment, which could keep pressure on construction costs over the next several years.

Extreme weather has also played a role in the supply chain during the Winter months, which had disrupted some port and logistics activity in the Southeast and Mid-Atlantic, though those impacts were short-lived. Trading Economics forecast models show the GSCPI will trend to the historic average early in 2023 and remain below historic levels throughout the year, which should further contribute to easing materials price inflation.

FIGURE 2.1: Global Supply Chain Pressure Index (GSCPI)



Data shown through December 2022.
Source: Federal Reserve Board of New York, CBRE Strategic Investment Consulting, Q1 2023.

The New York Federal Reserve uses a mix of global supply chain, transportation and commodity indexes and surveys to measure the current intensity of supply chain disruption.

The historic average is zero, and numbers indicate the amount of standard deviations from the historic average. As of the end of 2022, this figure exceeded one standard deviation, which is very high by historic standards, but down from the peak of four standard deviations observed in 2021.

Early estimates suggest this may rebalance to near zero in the first half of 2023, which would mean that global supply chain conditions have mostly returned to normal.

Lead times for most materials are still well-above the pre-pandemic norm

HVAC and electrical components are the largest pain point in terms of materials lead times and contractors expect those to stay the same or lengthen.

Lead times can vary quite a bit from region-to-region and even project-by-project, but some materials like electrical components were noted to have increased over the past three months and are expected to be longer over the next three months across all regions surveyed. Respondents were slightly more mixed on HVAC equipment, but at least one response from every region thought HVAC has taken and will take longer to procure.

Respondents in the Midwest and South were the only ones to note that concrete lead times have increased and are expected to further increase, though it was a minority of respondents in these regions. Equipment was noted as a problematic category in all regions except the Midwest.

FIGURE 2.2: Typical lead times for key materials

Material	Current lead time (weeks) ↑	Change (weeks) since last quarter	Change (%) since COVID
Gypsum / drywall	0-1	-4	None
Concrete	3-4	+1	200%
Fire alarms	4-6	+2	100%
Door frames	8-10	-4	300%
Steel beams & decking	10-14	None	75%
Open web joists	12-20	None	50%
Utility piping	12-20	-2	75%
Wood doors	18-20	None	233%
Lighting & controls	18-22	+2	233%
Roofing membranes	26-32	+2	867%
Roofing insulation	32-36	-8	433%
HVAC equipment	40-50	+4	300%
Switchgear	50-60	+10	300%

Note: Lead times reflect aggregated information from multiple major general contracting firms and are current as of December 2022. ↑ Indicates ascending sort order.
Source: CBRE Cost Consultancy, CBRE Strategic Investment Consulting, Q1 2023.

Notable TCC/CBRE Contractor Survey responses:

95%

Of surveyed contractors indicated that materials shortages or delays had an impact on their profitability in Q4 2022.

Only 30% of contractors said they thought that materials shortages or delays would improve in the next 3 months.

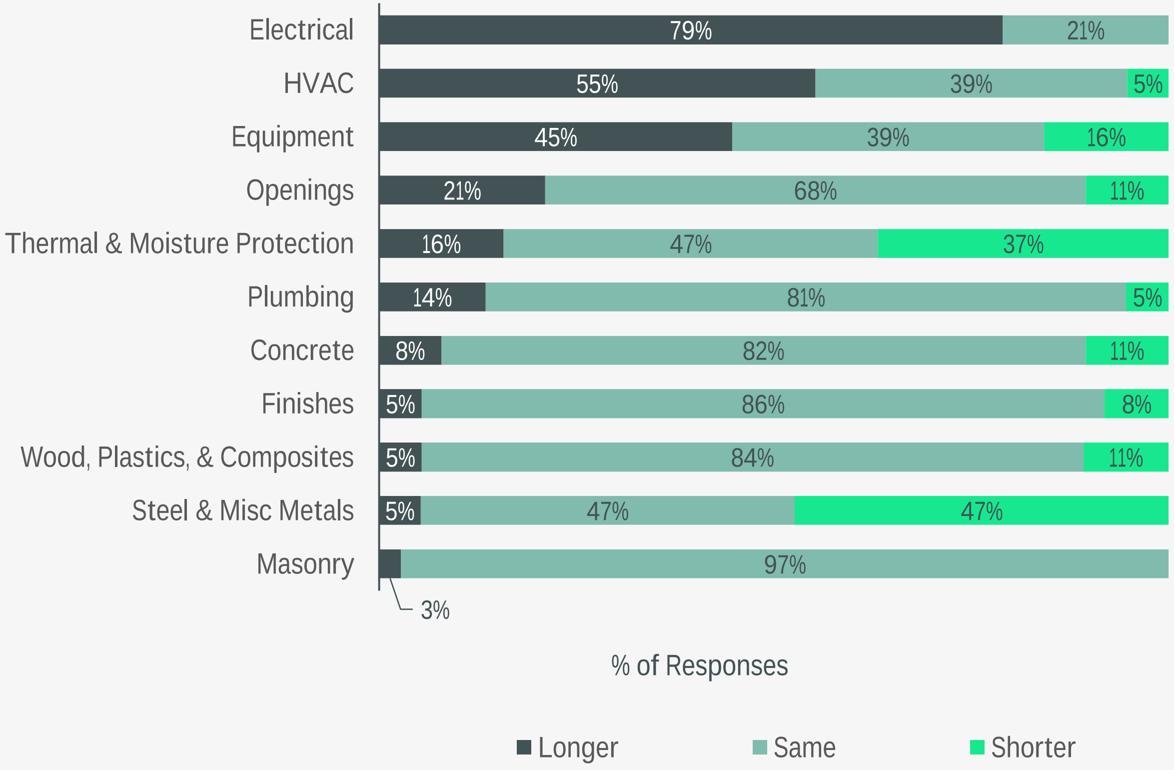
79% of those surveyed said Electrical lead times got longer over the last 3 months, and 65% said they expect even more delays in the coming months.

Metals had the largest share of responses indicating a shorter lead time over the past 3 months and expectations for shortening lead time over the next 3 months.

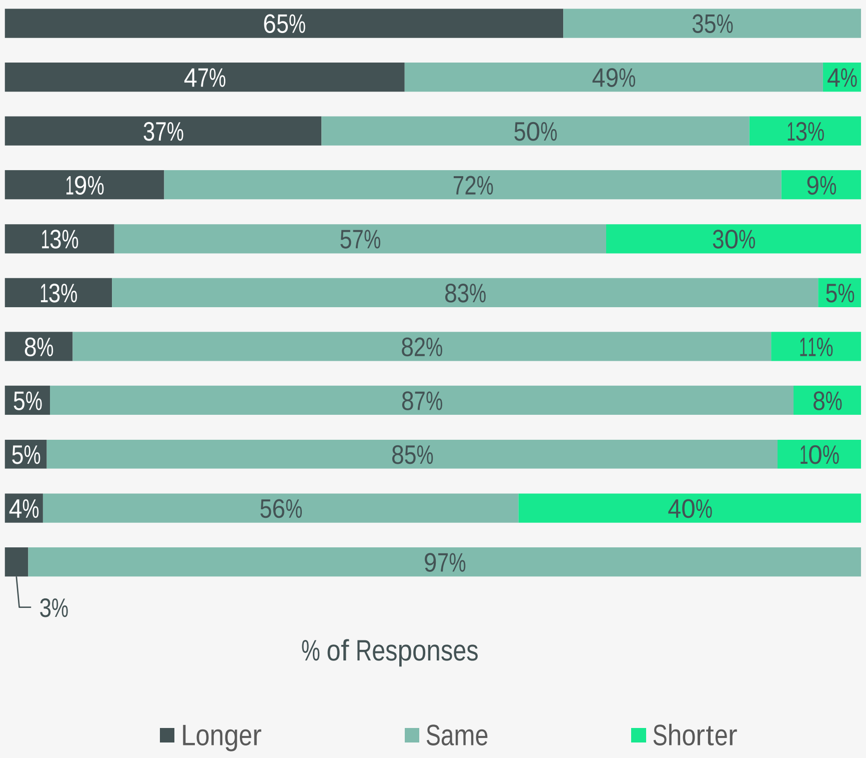
FIGURE 2.3: TCC/CBRE Contractor Survey – Lead Times

Metals and Thermal & Moisture Protection were material categories in which lead times were notably shorter over the past three months and expected to get even shorter over the next three months.

How has the average lead time changed over the past 3 months?



How will the average lead time change over the next 3 months?



Source: Various Contractors, CBRE Strategic Investment Consulting, March 2023.

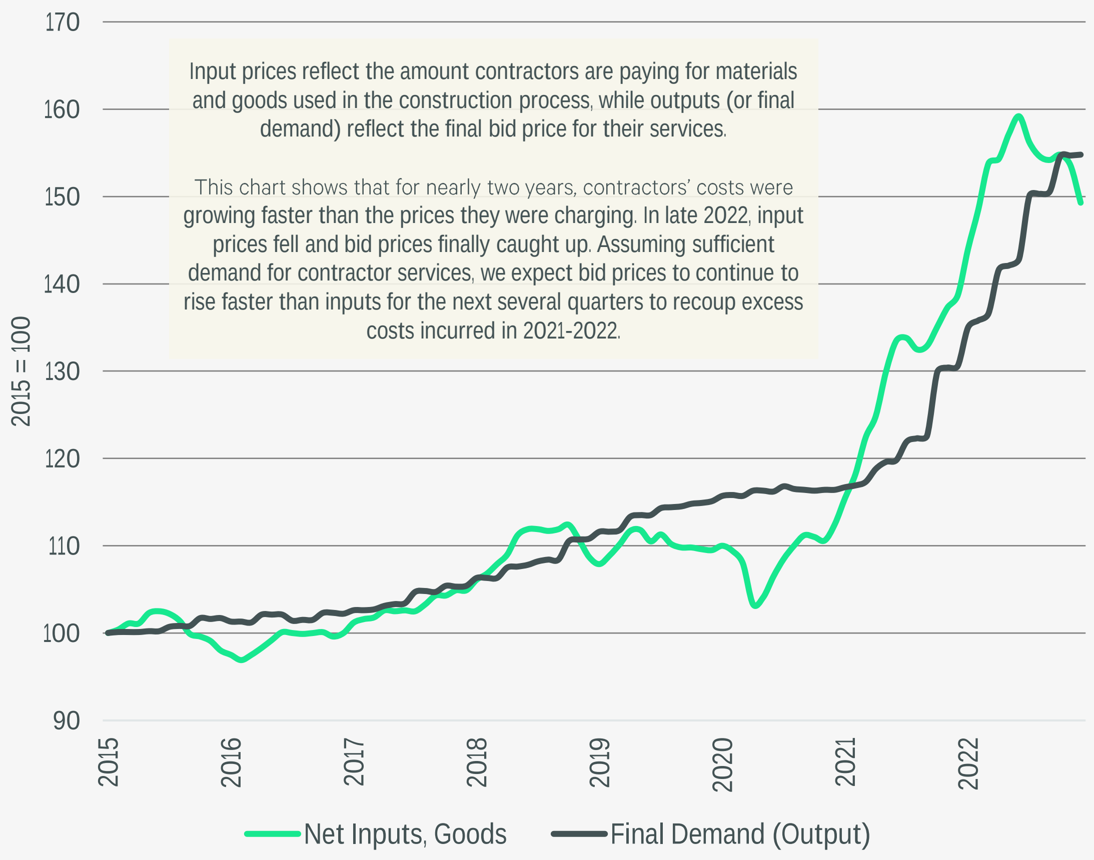
Shortages and delays plus high builder demand have led to sharp increases in materials prices but the rate of growth is slowing

Major changes in input prices (i.e. materials) tend to lead to corresponding changes in output prices (i.e. final costs) in the future. Recently, net input prices have started falling after a prolonged period of sharp increases.

The index of net inputs (goods) to new construction tracks the relative prices of several basic materials for new construction over time. After an initial drop in the early days of the pandemic, this measure has increased sharply, outpacing and leading the final demand price (which measures the final cost of new construction as paid by the market). Typically, a prolonged gap between these metrics indicates that builders have been absorbing large amounts of the cost increases rather than passing them on entirely to the end-market.

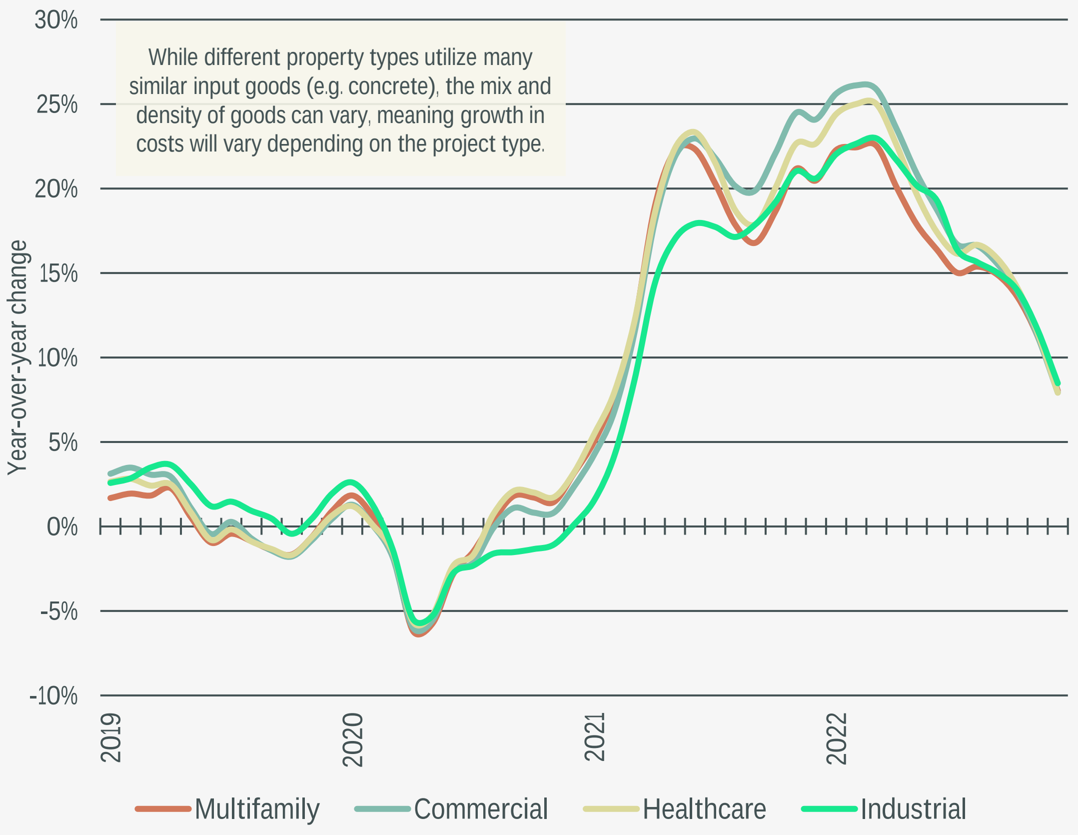
In mid-2022, final costs finally caught up with net inputs as materials prices began to fall. Given the prolonged period of absorbing costs, it is likely even as input prices fall or grow more slowly, final costs will continue to climb as a means of recuperating some of the lost gains in the past two years.

FIGURE 2.4: Input vs. Output Price Index, new construction



Note: Not seasonally adjusted. Data shown through December 2022.
Source: Bureau of Labor Statistics, Producer Price Index, CBRE Strategic Investment Consulting, Q1 2023.

FIGURE 2.5: Net inputs to new construction (goods) by property type, year-over-year change



Note: Not seasonally adjusted. Data shown through December 2022. Commercial includes office.
Source: Bureau of Labor Statistics, Producer Price Index, CBRE Strategic Investment Consulting, Q1 2023.

Prices for key materials have far outpaced the pre-pandemic growth rate but are beginning to slow

Price inflation for construction inputs is six times higher than it would be if it had kept pace with the pre-pandemic inflation rate.

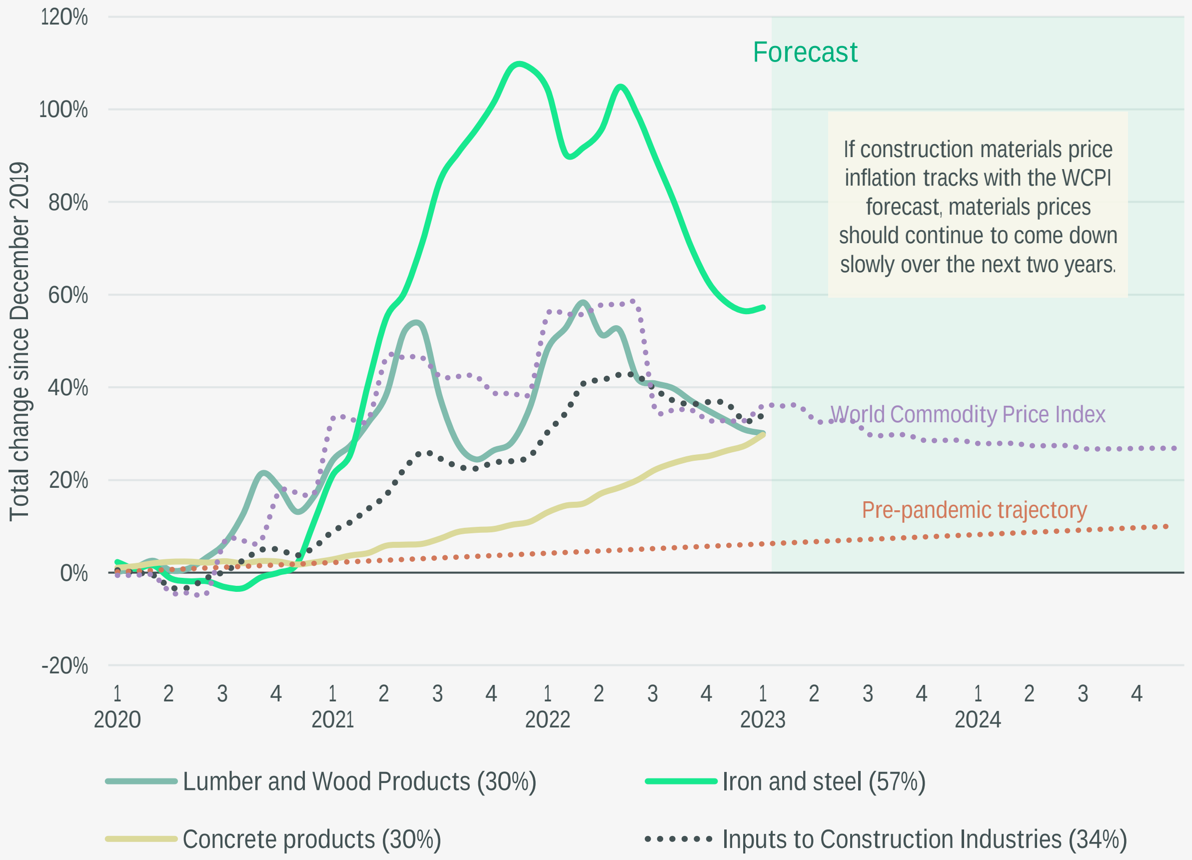
Early in the pandemic, prices for materials were largely flat or down as demand halted while projects were sidelined. Later in 2020, lumber and wood products were the first to rise, driven by the residential building and home improvement boom. Labor shortages impacted domestic and international production, but prices began to fall in 2022 as tariffs on Canadian softwood and residential demand settled. As of year-end 2022, lumber prices had fallen by 24% from the previous year and 9% from the previous quarter,

Iron and steel spiked the most in 2021, and prices remain more elevated than other major commodities but have generally been coming down since late 2021 when tariffs were relaxed on EU aluminum and steel. Iron and steel was down 24% year-over-year in December, with steel mill products falling nearly 30%.

Concrete prices have been rising faster than the historic norm since the pandemic, but much steadier than other key materials. Most of the inflation came in 2022, with prices up 15% year-over-year in December, due in large part to high demand from industrial and infrastructure projects.

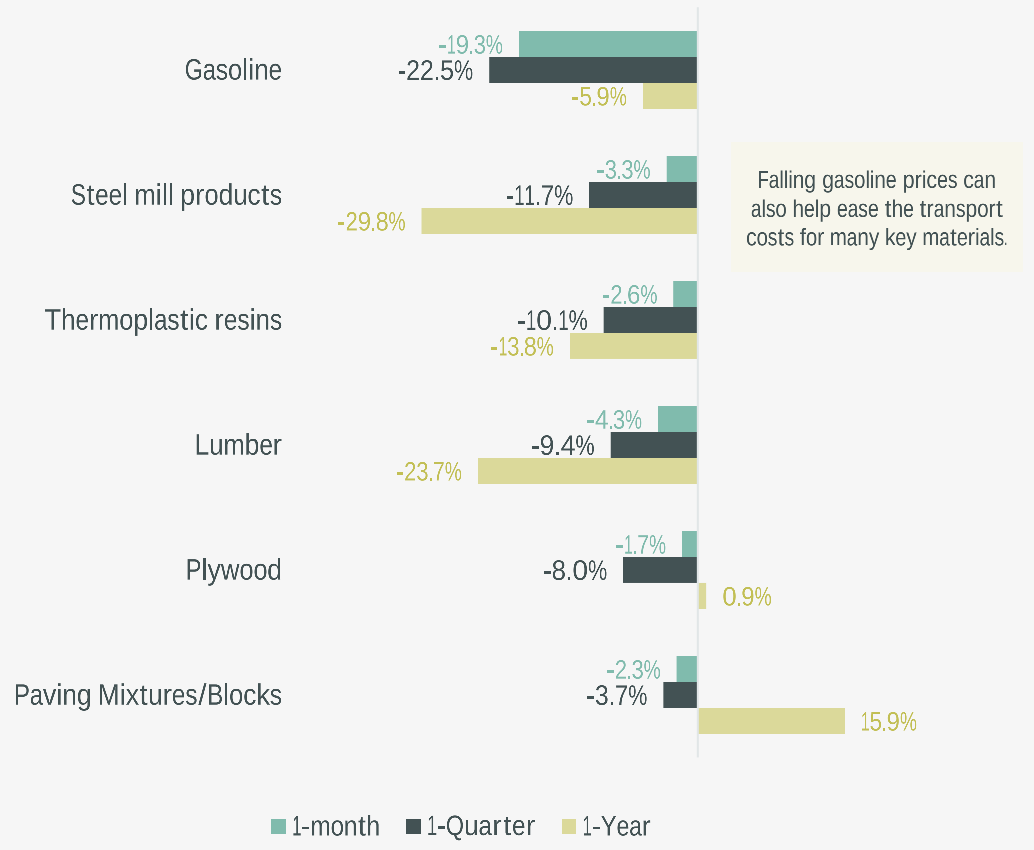
The Oxford Economics World Commodity Price Index (WCPI) forecast shows prices falling by 3.2% in the next 12 months. The WCPI is a weighted average of select commodity price indices, based on identified benchmark prices which are representative of the global market. The WCPI has tracked similarly to construction inputs since the end of 2019, so this is a positive indicator for materials prices falling in the coming year.

FIGURE 2.6: Cumulative price index change (%) since December 2019 for major construction commodities



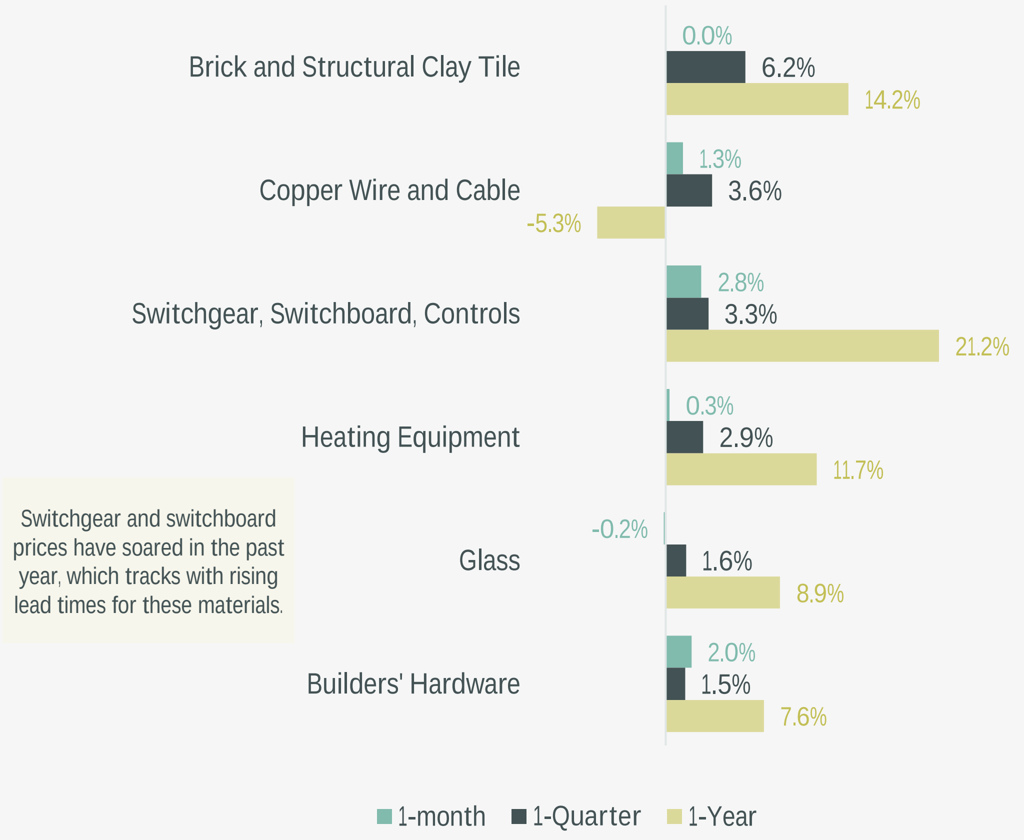
Note: Not seasonally adjusted. Data for construction materials shown through January 2023. (%) = Total change since Dec. 2019. Pre-pandemic trajectory is the rate of change of inputs to construction from 2015-2019 extrapolated forward.
Source: Bureau of Labor Statistics, Producer Price Index, Oxford Economics, CBRE Strategic Investment Consulting, Q1 2023.

FIGURE 2.7: Significant Producer Price Index decreases, Key Construction Materials



Note: Not seasonally adjusted. Data shown through December 2022. Sorted by 1-quarter change.
Source: Bureau of Labor Statistics, Producer Price Index, CBRE Strategic Investment Consulting, Q1 2023.

FIGURE 2.8: Significant Producer Price Index increases, Key Construction Materials



Note: Not seasonally adjusted. Data shown through December 2022. Sorted by 1-quarter change.
Source: Bureau of Labor Statistics, Producer Price Index, CBRE Strategic Investment Consulting, Q1 2023.

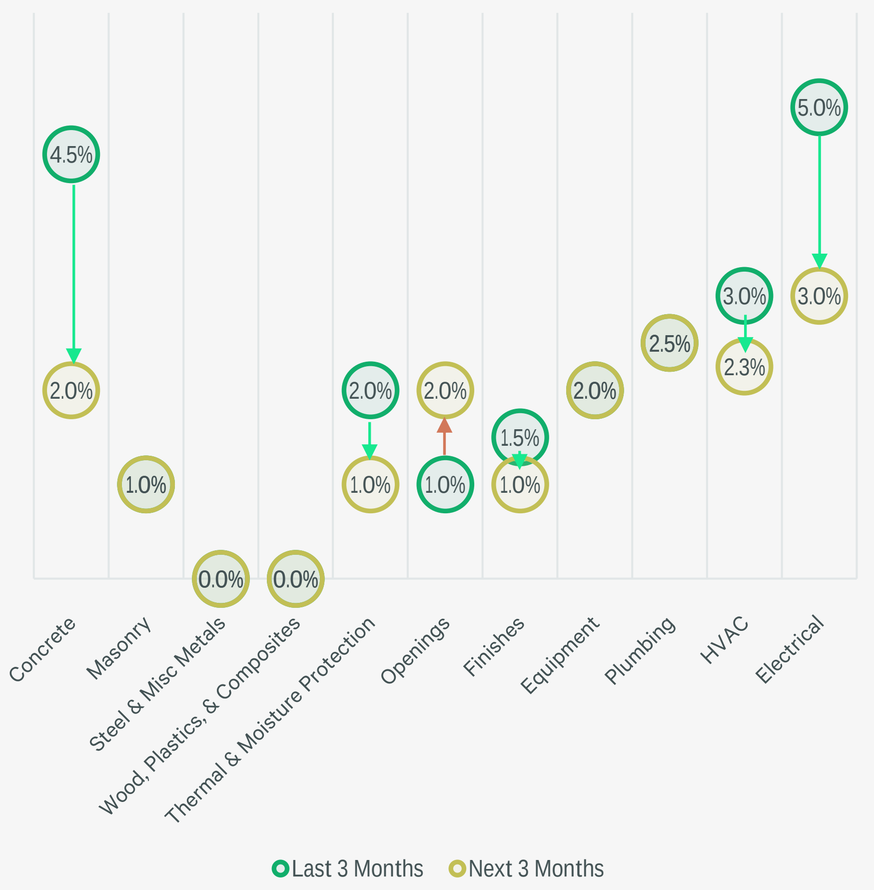
Contractors generally expect material prices to continue slowing over the next three months

Contractors noted that concrete and electrical prices rose the most over the past three months but expect prices for both commodities to slow in the next three months.

Openings were the only material category in which the median contractor response was higher for the next three months than the past three. Most commodities are expected to retain the same price changes over the next three months. Steel & miscellaneous metals prices were flat and expected to remain flat, which is also the case for wood, plastics & composites.

FIGURE 2.9: TCC/CBRE Contractor Survey

Material Cost Changes - Median Response in Feb/Mar 2023



Source: Various Contractors, CBRE Strategic Investment Consulting, March 2023

Notable TCC/CBRE Contractor Survey responses:

Relative to other regions, respondents in the Northeast indicated the highest material price inflation over the last 3 months and expect higher inflation over the next 3 months.

Respondents in the South indicated lower increases overall in recent months, except regarding concrete and electrical which were noted to be rising more rapidly in the region.

Respondents with experience in the life sciences sector had slightly higher responses for materials inflation recently and in the future, noting that HVAC and lab equipment were particular pain points.

Concrete prices have increased more rapidly in the West than other regions

Concrete is more likely than other materials to vary in price changes by region, though the West stands out in price increases over the past year.

In recent months, the Midwest has had a more sizeable uptick in concrete prices, with Chicago being one market to note more extreme increases in recent months. A report from ENR quotes contractors estimating concrete prices to be up 30% for certain mixes in early 2023 when compared to the prior year, and one survey respondent noted increases as high as 20% in just the prior three months in Chicago.

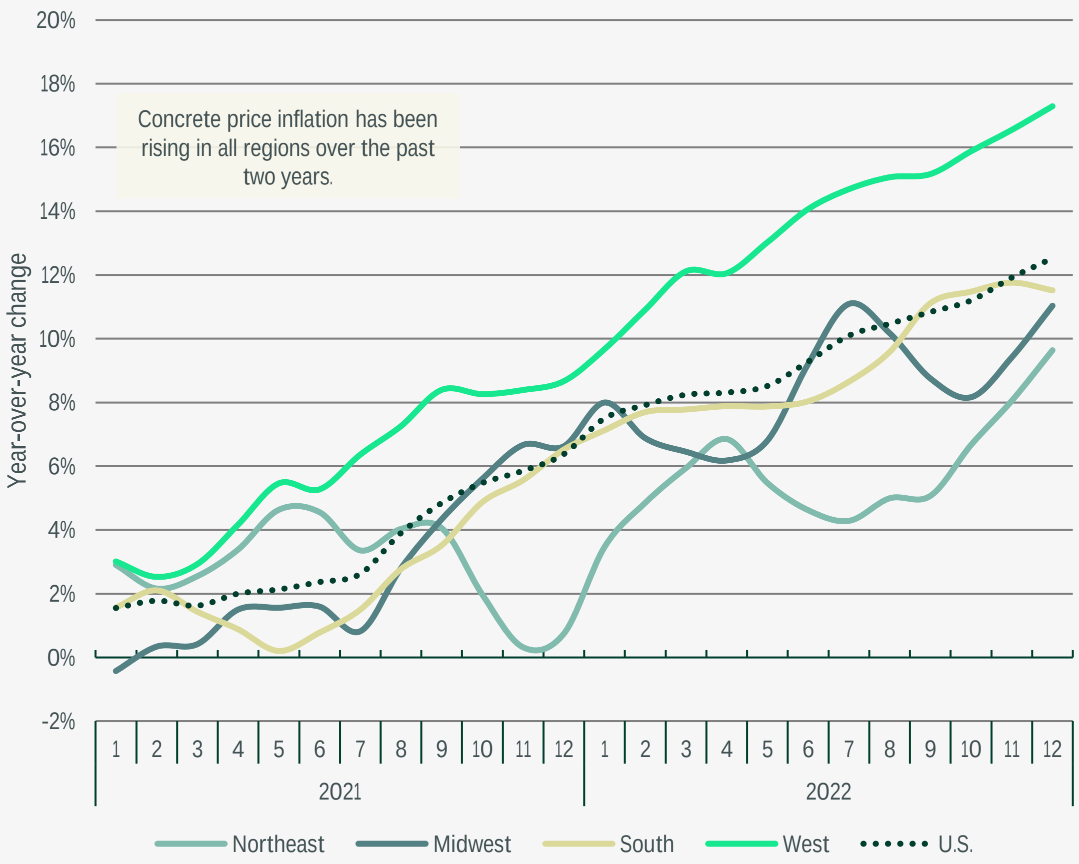
Supply issues, due in large part to ongoing labor issues, have in part driven up cost, while suppliers are also dealing with increased fuel prices which is impacting concrete delivery prices via fuel surcharges. Demand has also been higher, due to an uptick in infrastructure and industrial projects. These elements help explain the outsized growth in the West, where demand has been very high but also energy costs have risen more substantially.

Notable TCC/CBRE Contractor Survey responses:

Despite the producer price index measure for concrete prices showing slower growth in the South, this region reported the highest increases in the past 3 months and the highest expected increases over the next 3 months. This indicates price growth may be accelerating in the first half of 2023.

The recent uptick in concrete prices in the Midwest (as shown in the chart to the right) were reiterated by survey respondents in this region, noting above-average cost increases.

FIGURE 2.10: Year-over-year change (%) in Price index for ready-mix concrete by region



Note: Not seasonally adjusted. Data shown through December 2022.
Source: Bureau of Labor Statistics, Producer Price Index, CBRE Strategic Investment Consulting, Q1 2023.

While many aspects of the supply chain have improved, certain categories still face deep challenges and resolutions will depend on key policy decisions

FIGURE 2.11: Key factors and outlook for materials and equipment costs

FACTOR	NOTEWORTHY TRENDS	INFLUENCE ON CONSTRUCTION OUTLOOK
Tariffs and trade	Under the Biden Administration, U.S. industrial and trade policy has been focused on increasing supply chain resilience through new multi-lateral trade agreements, while also addressing climate impacts and boosting domestic production. Metals materials and electronic components are the most notable construction-related targets of the current trade strategy. IPEF (APAC) and GASSA (EU) are direct attempts to diversify U.S. procurement of these inputs from Asia and Europe while decreasing reliance on China.	The trade-related policy approaches are still just frameworks that could have long-term benefits for supply chain resilience, but also come with some risk of further destabilizing U.S.-China relations. It is also unclear how these policies would impact cost as it may be more expensive to procure certain materials from certain trade partners. Direct tariff-related negotiations could have a more immediate impact. It is unlikely tariffs will be weakened on China or Russia in 2023, but the U.S. may further soften rates for lumber and steel imports from Canada, Japan and other existing trade partners.
Re-shoring, near-shoring and domestic production	Increasing domestic production has been a key pillar of U.S. supply-chain strategy. The CHIPS Act, Inflation Reduction Act and Infrastructure Investment and Jobs Act all dedicate large funding volumes to domestic production and supply chain resilience, especially for technology and electronics. In Q2 2023, President Biden invoked the Defense Production Act (DPA) to spend $50 million on domestic and Canadian production of printed circuit boards.	Policy attempts to increase domestic production are most likely to impact electronic components and other manufactured construction inputs that currently rely heavily on overseas production. Given the scale of the current trade volumes, it will take time for these policies to relieve shortages and costs, but these efforts should have long-term benefits for the supply chain. Smaller-scale actions like invoking the DPA should result in more near-term benefits.
Global conflict	The Russia-Ukraine war has had widespread impacts on supply chains, affecting energy, aluminum and other metals cost and lead times most directly. While these materials are important to construction, they're also in high demand from automakers, chipmakers and other producers, which is causing additional widespread shortages and cost increases.	The timeline and long-term resolution of the Russia-Ukraine war remains very uncertain, but it is likely sanctions on Russia will stay in place for the foreseeable future. The success of new trade agreements and policies will be paramount to softening prices and lead times for products that use aluminum, nickel and other materials from Russia.

Source: CBRE Strategic Investment Consulting, Q1 2023.

03

Labor Market Trends

A tight labor market has led to hiring challenges and higher wages

The construction unemployment rate reached an all-time low in late 2022 as job openings rose, putting increased pressure on wages.

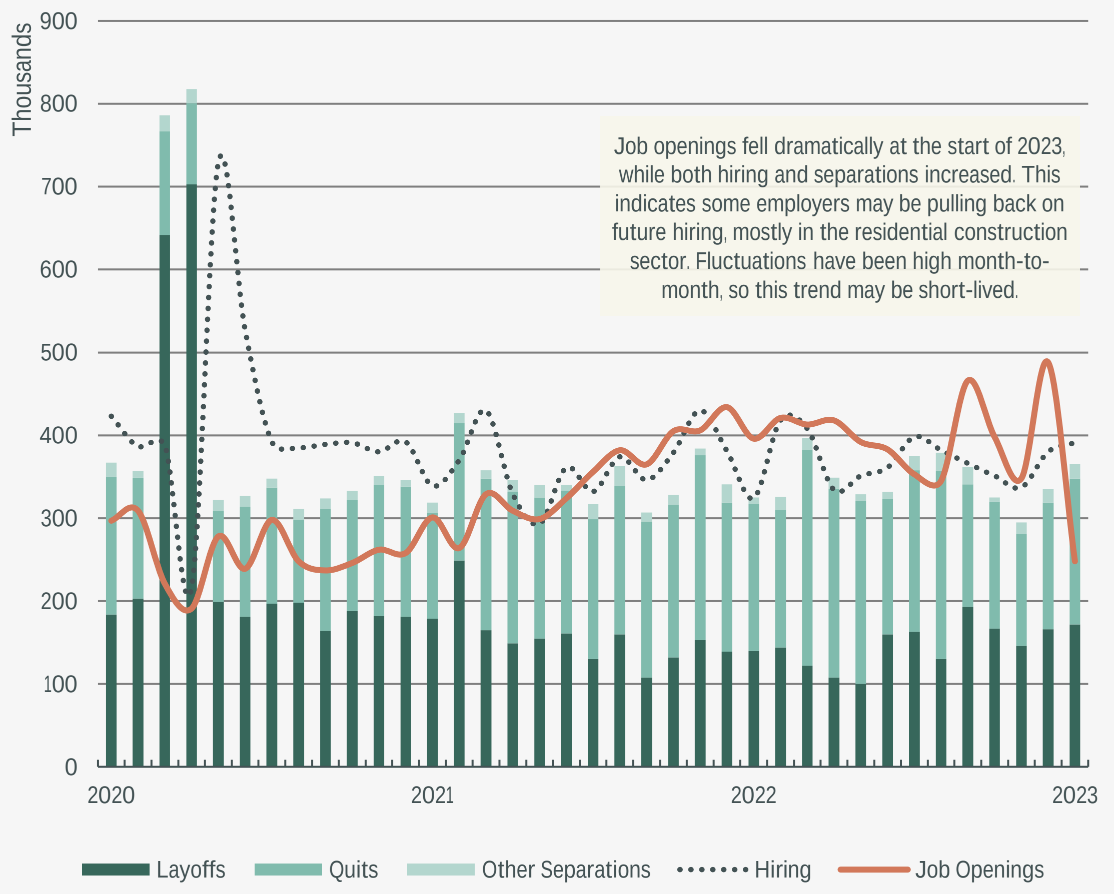
Once the economy began recovering in late 2020, the U.S. quickly faced a severe labor shortage that impacted nearly all sectors. Initially, the construction sector was able to rebalance and assume pre-pandemic hiring trends, leaving a little slack in the labor market. But as demand for new construction accelerated in 2021 (see Part 1), employers needed more workers than they were able to hire.

Construction employers often have to compete with other private sectors for the same workers, especially employers in lower barrier-to-entry occupations. Many food service, retail and logistics companies significantly boosted wages and benefits in the last two years to compete for talent, which also put pressure on construction employers to keep up.

Construction job openings exceeded hiring and separations (layoffs, quits and retirements) throughout Q4 2022, a clear indication of a labor shortage, but that trend shifted early in 2023. Preliminary data shows a steep drop in job openings in early 2023, likely indicating weakening labor demand. However, separations and hiring remained stable, meaning employers were not losing employees and were continuing to fill existing job vacancies.

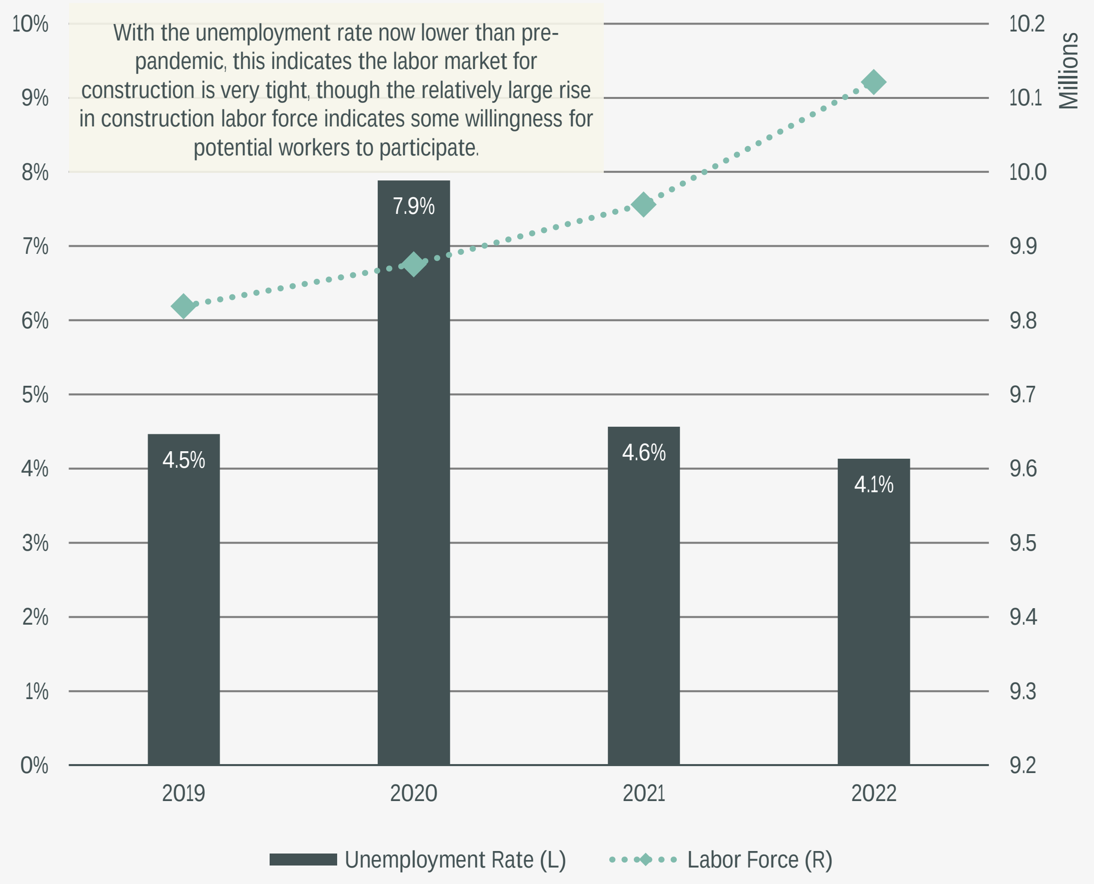
Job openings often fluctuate for the construction sector, so it is possible this drop is more noise than trend. There is other evidence that labor demand is slowing in the residential construction sector, but demand is still exceeding supply for nonresidential builders. Construction unemployment also remains at or near all-time lows, which indicates wage pressure should continue into 2023.

FIGURE 3.1: Job openings, hiring and separation data for U.S. construction sector



Note: Not seasonally adjusted. Data show through January 2023.
Source: Bureau of Labor Statistics, Producer Price Index, CBRE Strategic Investment Consulting, Q1 2023.

FIGURE 3.2: Construction unemployment rate and labor force, Q4 2019-2022



Note: Data shows the average across three months in Q4 of each year.
Source: Bureau of Labor Statistics, CBRE Strategic Investment Consulting, Q1 2023.

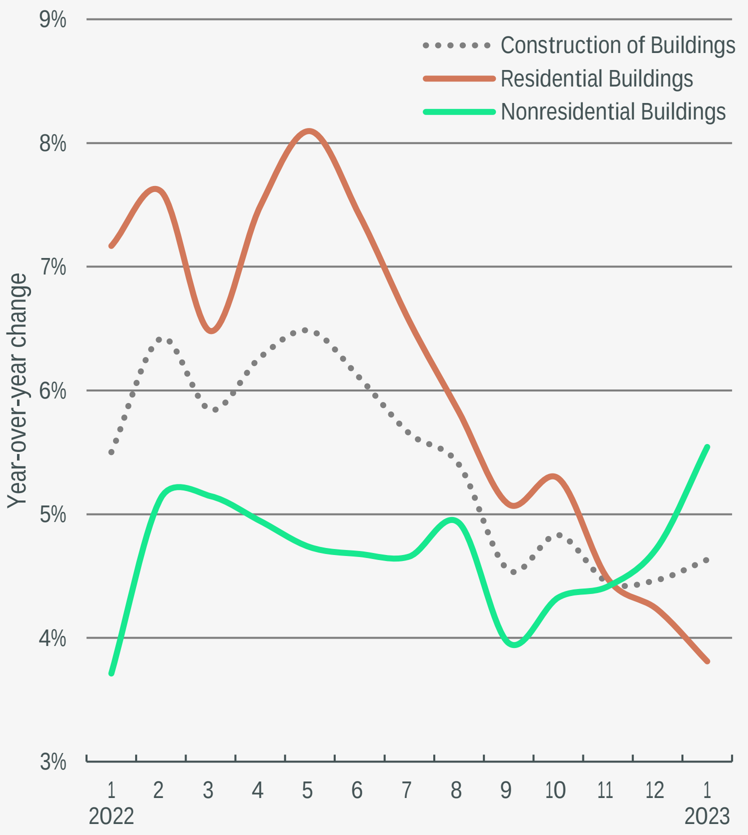
Recent employment growth has been concentrated in nonresidential building, which is driving wage growth in that subsector

While both construction subsectors pull many employees from the same labor pool, market conditions can vary depending on demand for certain occupations.

Prior to Q4 2022, demand was much higher in the residential sector (see part 1), which was driving hiring of construction labor and pushing up wages. Though slower than residential, nonresidential employment was growing at a relatively high pace and also competing with residential builders for talent, so wage growth was similar across both subsectors.

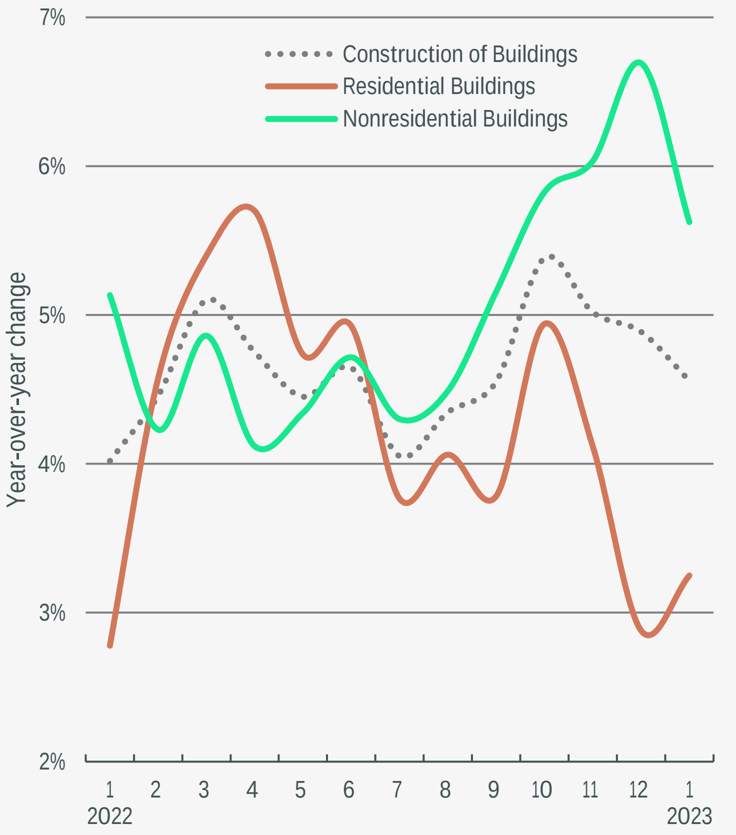
As residential employment growth slowed later in the year, wage growth also slowed in the subsector. The opposite effect was felt by nonresidential builders who were ramping up employment amid strong demand for industrial and other commercial development, which put significant pressure on wages.

FIGURE 3.3: Year-over-year change (%) in U.S. employment by construction subsector



Note: Data shown through January 2023.
Source: Bureau of Labor Statistics (CES), CBRE Strategic Investment Consulting, Q1 2023.

FIGURE 3.4: Year-over-year change (%) in average hourly wage by construction subsector



Note: Data shown through January 2023.
Source: Bureau of Labor Statistics (CES), CBRE Strategic Investment Consulting, Q1 2023.

Employment levels in most markets have rebounded since the onset of the pandemic and wages have soared in nearly all of them

Some markets (in red in Figure 3.5) have yet to rebound to pre-pandemic employment, which may reflect lower demand in those markets or could mean a shortage of labor, depending on the market.

Some markets, like St. Louis and Kansas City, rebounded quickly and aggressively increased employment and wages, so the recent and expected slowdown reflects a potential over-hiring in those markets.

According to general contractors surveyed for this report, most markets expect the pace of wage growth over the next three months to be similar or slower than the past three. Chicago and Portland are exceptions (wage growth is expected to accelerate), but respondents in these markets also noted slower growth over the prior three months.

Aside from rising wage growth, contractors felt like other factors such as more shift differential pay and collective bargaining did not have a significant impact on labor costs (see figure 3.8 on the next page).

FIGURE 3.5: Construction employment growth by market and time period, as of Q4 2022

Market	1-Year History ↓	1-Year Forecast	Change since COVID (From Q4 2019)
Madison	9.8%	-0.7%	11.0%
San Jose	9.5%	0.8%	5.0%
Dallas	7.1%	-0.6%	6.4%
Portland	6.2%	0.9%	7.7%
Raleigh	6.0%	-0.8%	14.1%
Houston	5.6%	-1.3%	-6.5%
Phoenix	5.5%	2.4%	11.5%
Atlanta	5.2%	0.2%	7.5%
Newport Beach	5.1%	0.3%	2.5%
Seattle	4.3%	-0.5%	4.5%
New Jersey	3.6%	-0.4%	0.0%
U.S.	3.5%	-0.5%	4.2%
Kansas City	3.2%	-1.6%	7.9%
San Diego	2.0%	0.6%	4.5%
Washington, D.C.	1.8%	-1.6%	0.1%
Los Angeles	1.5%	-0.1%	-0.5%
Denver	1.3%	1.1%	-2.0%
San Francisco	1.1%	0.8%	-4.2%
Philadelphia	0.8%	-0.7%	2.9%
Boston	0.7%	-0.7%	3.4%
Chicago	0.7%	-3.0%	-1.3%
Austin	0.3%	0.6%	10.6%
St. Louis	-1.4%	-1.3%	3.3%
Minneapolis	-4.7%	-0.3%	-1.7%

Source: Bureau of Labor Statistics (CES history), Oxford Economics (QCEW forecast), CBRE Strategic Investment Consulting, Q1 2023

↓ Indicates descending sort order.

FIGURE 3.6: Construction average weekly wage growth by market and time period, modeled estimates as of Q4 2022

Market	1-Year History ↓	1-Year Forecast	Change since COVID (From Q4 2019)
San Jose	9.3%	6.5%	17.3%
Portland	6.2%	7.6%	21.6%
Atlanta	4.9%	6.8%	16.2%
Madison	4.3%	4.2%	9.3%
Los Angeles	4.0%	5.8%	14.8%
Newport Beach	4.0%	5.8%	14.8%
Washington, D.C.	3.7%	3.6%	15.1%
Seattle	3.5%	7.6%	15.6%
Dallas	3.4%	10.1%	19.4%
Raleigh	3.2%	4.8%	17.1%
San Diego	3.0%	6.0%	15.0%
Chicago	2.8%	4.3%	9.9%
U.S.	2.7%	6.5%	14.5%
Houston	2.6%	4.8%	9.6%
Kansas City	2.3%	6.0%	11.4%
Boston	2.3%	5.8%	10.8%
Denver	1.9%	5.7%	19.6%
Minneapolis	1.8%	4.2%	13.4%
New Jersey	1.2%	3.1%	12.2%
San Francisco	0.9%	3.5%	9.5%
Philadelphia	0.8%	5.7%	13.4%
Phoenix	0.0%	7.3%	23.1%
Austin	-0.4%	7.9%	19.7%
St. Louis	-3.3%	-0.1%	19.1%

Source: Bureau of Labor Statistics (QCEW), Oxford Economics, CBRE Strategic Investment Consulting, Q1 2023.

↓ Indicates descending sort order.

FIGURE 3.7: TCC/CBRE Contractor Survey

What is the total labor cost change your firm experienced over the prior three (3) months and what are you projecting for the next three (3) months

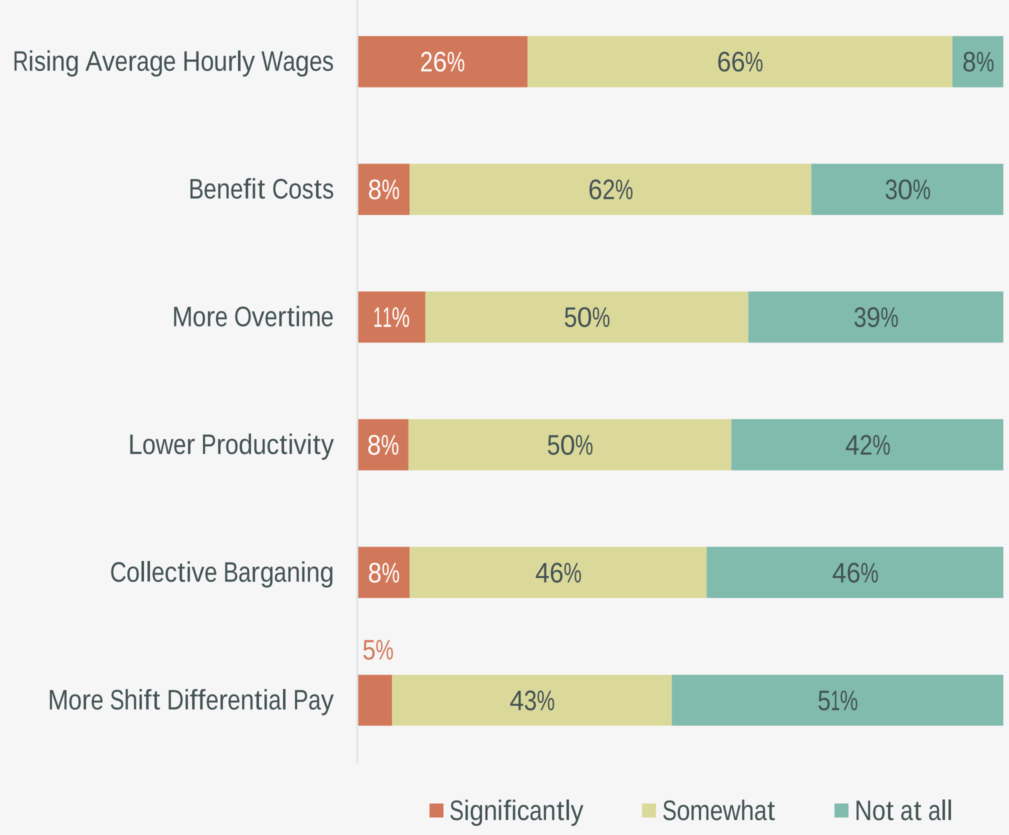
Pace of Growth over Last 3 Months (Relative to All Markets)

Expected Pace of Growth Next 3 Months (Compared to Last 3 Months)	Slower than U.S. average in the last 3 months	Similar to U.S. average in the last 3 months	Faster than U.S. average in the last 3 months
Accelerating in the next 3 months	Chicago Portland		
Steady (Similar to last 3 months)	Boston Los Angeles San Diego San Francisco San Jose *Northeast Region*	Austin New Jersey St. Louis	*Midwest Region*
Decelerating in the next 3 months	Philadelphia Seattle *West Region*	Denver Orange County *All Markets*	Atlanta Houston Minneapolis Phoenix *South Region*

Note: Market text colors correspond to their geographic region.
Source: Various Contractors, CBRE Strategic Investment Consulting, March 2023

FIGURE 3.8: TCC/CBRE Contractor Survey

To what extent have each of the factors below impacted overall labor costs in your market over the past three (3) months?



Source: Various Contractors, CBRE Strategic Investment Consulting, March 2023

Hiring and retaining skilled workers has impacted the bottom line for contractors

Lack of training, skills and experience of new hires was also noted as impacting profitability for contractors.

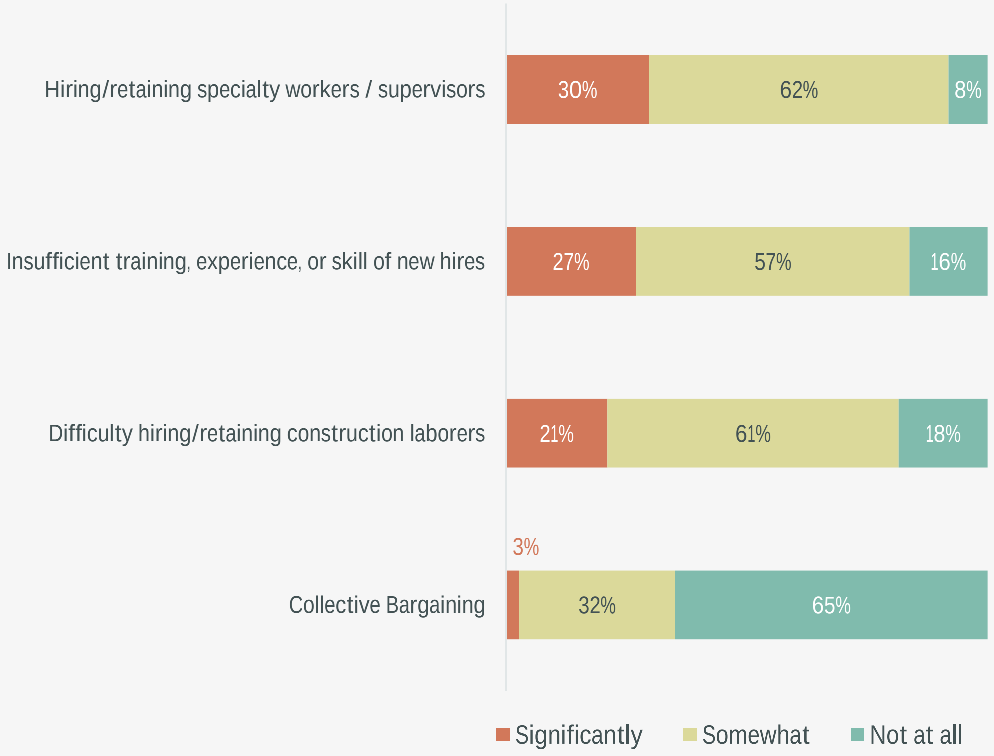
The lack of skills and experience of new hires was especially felt in the Midwest, where half of the respondents said this has impacted them "significantly" while the other half responded "somewhat" of an impact. However, one third of respondents in the Midwest expected conditions surrounding new hire skills to improve in the next three months, which was more than any other region.

Hiring difficulties of both laborers and specialists was felt most strongly in the West, where roughly one-third of respondents noted significant impact for both hiring prompts. Respondents were split on whether this would improve or worsen over the next three months, though the majority thought conditions would remain the same.

In the South, 100% of respondents noted hiring challenges were at least "somewhat" impacting profitability, but only 13% said it was significant, which was the lowest of any region. However, respondents in the South (as well as the Northeast) were much more likely to think conditions around hiring would worsen than improve, meaning contractors in those markets are expecting a tighter labor market in the coming months.

FIGURE 3.9: TCC/CBRE Contractor Survey

To what extent have each of the factors below negatively impacted your firm's profitability over the past three (3) months?



Source: Various Contractors, CBRE Strategic Investment Consulting, March 2023

Notable TCC/CBRE Contractor Survey responses:

92%

of surveyed contractors said that their profitability has been negatively impacted by the difficulty of hiring or retaining specialty workers or supervisors.

24% thought this problem would worsen, while 22% thought it would improve over the next 3 months.

84% said that insufficient skills/experience of new hires was hurting their profitability. 31% said this problem was going to worsen over the next 3 months, while only 11% thought it would improve.

These responses strongly indicate that improved workforce pipeline and training, especially for skilled positions, are paramount to the success of the industry.

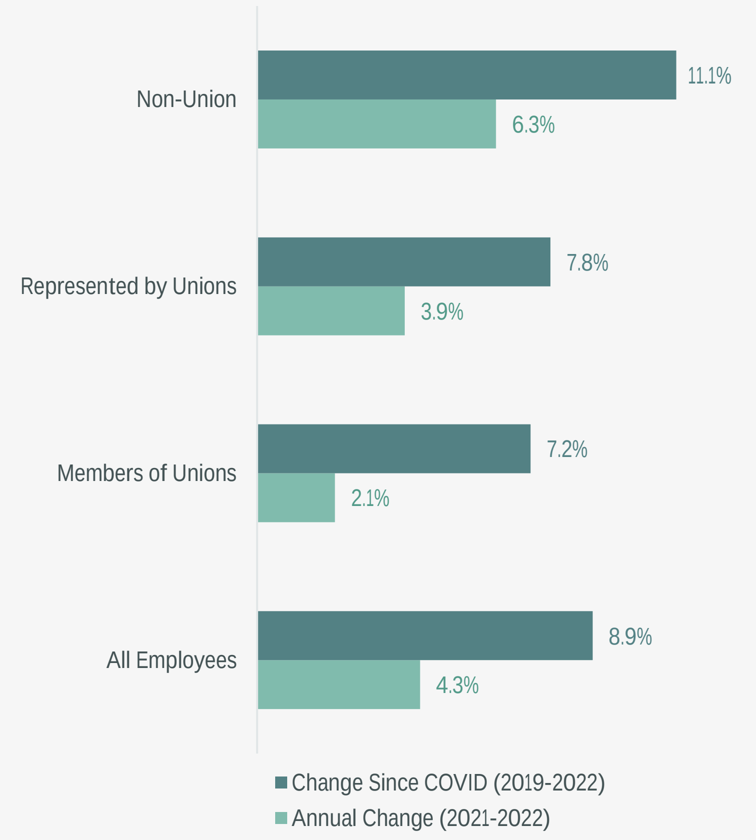
Union membership offers a wage premium but growth rates have not kept up with non-union wages

In markets with a low union wage premium (see Figure 3.11), there may be additional pressure to renegotiate union contracts to keep up with the recent non-union spike in non-union wages.

For union members in construction occupations, wages have grown at roughly one-third the pace of non-union members from 2021-2022. Non-union wages tend to fluctuate more closely with the overall tightness and demand in the labor market, since wages typically are set without extensive negotiation or robust labor contracts. Conversely, union wages are set by a contract that can sometimes be negotiated years in advance, meaning wages are tied to the terms of the contract until a new contract cycle approaches.

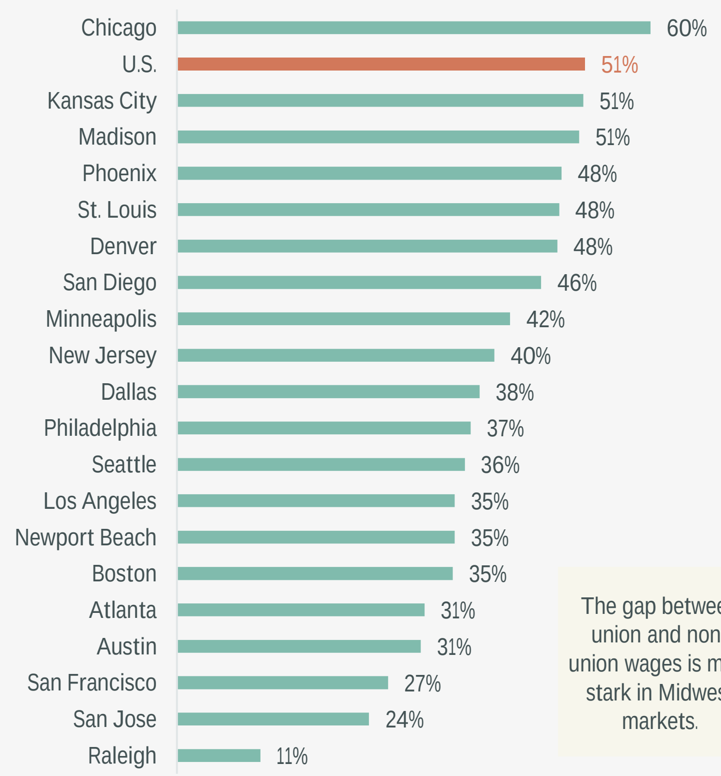
Employers in markets with high union participation and upcoming contract expirations should expect an outsized jump in wages as new contracts are negotiated, as the market rate (set by non-union employees) has far exceeded the recent increases in union wages, so labor unions will be looking to catch up.

FIGURE 3.10: Change (%) in median weekly earnings by union affiliation and time period, construction occupations



Note: Data is annual. Latest full year is 2022.
Source: Bureau of Labor Statistics (CPS), CBRE Strategic Investment Consulting, Q1 2023.

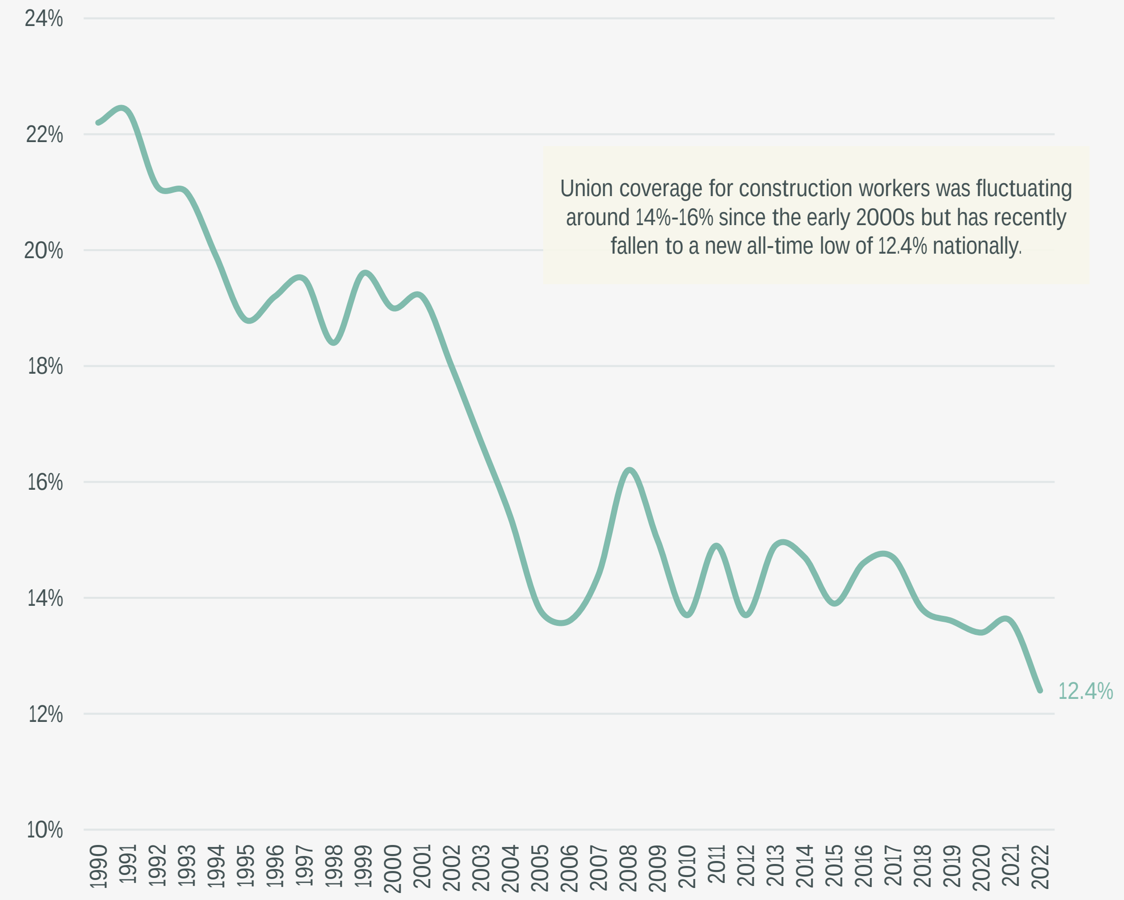
FIGURE 3.11: Union Wage Premium, percent difference in wage between union/non-union construction occupations by market



The gap between union and non-union wages is most stark in Midwest markets.

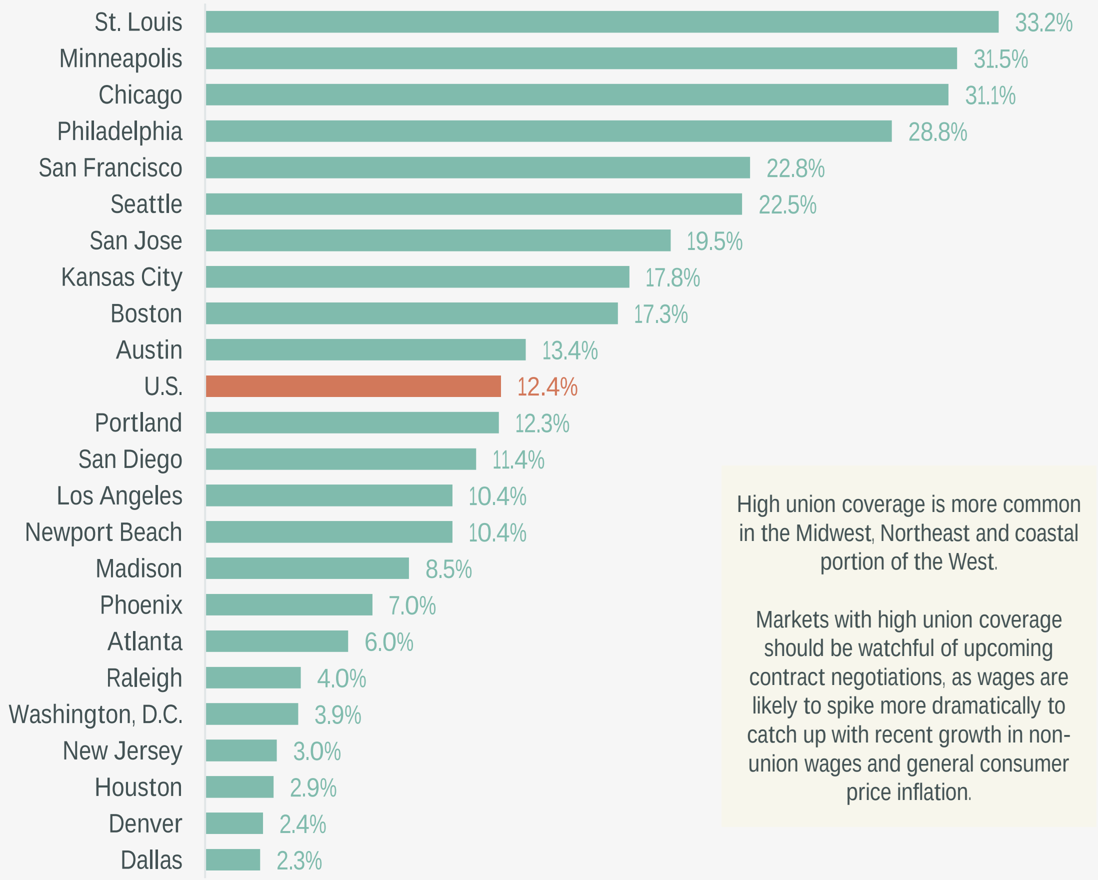
Note: Data is annual. Latest full year is 2021. Data is unavailable for Houston, Portland and Washington, D.C.
Source: Bureau of Labor Statistics (Modeled Wage Estimates), CBRE Strategic Investment Consulting, Q1 2023.

FIGURE 3.12: Union coverage as a share of all U.S. private construction workers



Note: Data is annual. Latest full year is 2022.
Source: Bureau of Labor Statistics (CPS), unionstats.com, CBRE Strategic Investment Consulting, Q1 2023.

FIGURE 3.13: Union coverage as a share of all private construction workers by market, 2022



High union coverage is more common in the Midwest, Northeast and coastal portion of the West.

Markets with high union coverage should be watchful of upcoming contract negotiations, as wages are likely to spike more dramatically to catch up with recent growth in non-union wages and general consumer price inflation.

Note: Data is annual. Latest full year is 2022.
Source: Bureau of Labor Statistics (CPS), unionstats.com, CBRE Strategic Investment Consulting, Q1 2023.

Despite negative headlines driven by the tech sector, the demand for labor still exceeds supply in many industries, including construction

FIGURE 3.14: Key factors and outlook for labor costs and other challenges

FACTOR	NOTEWORTHY TRENDS	INFLUENCE ON CONSTRUCTION OUTLOOK
Immigration and Labor Force Growth	Construction employers have long utilized the H2B visa program to secure additional workers, though the program can be costly. In December 2022, Department of Homeland Security (DHS) and the Department of Labor (DOL) increased the cap on H-2B visas by up to 64,716 additional visas for FY 2023. Organizations like NAHB have been lobbying the federal government to further increase visa caps and legislate more substantial immigration reform, but the divided congress means deep reform is unlikely in the next several years.	Immigration can be a key source of construction labor, with foreign-born workers making up roughly a third of all construction trade workers nationally and more than half in some markets (e.g. Los Angeles). A rebound in immigration would likely boost the labor supply for construction and ease pressure on wages, especially in markets with a heavy reliance on a foreign-born workforce.
Skilled Talent Pipeline	Construction apprenticeships have not grown much since the onset of the pandemic, despite rising wages and demand for talent, which has stunted the skilled talent pipeline. In 2022, the DOL announced its “Apprenticeship Building America” program, which will include $113 million in grant funding to support construction-specific apprenticeships nationwide. Companies with Registered Apprenticeship Programs (RAPs) through the DOL are eligible for tax credits and employee tuition reimbursement funds.	Our survey indicated that the skill level of talent was a particular pain point for contractors in many markets. Many skilled trades require years of on-the-job training in addition to more formal trade school education, but a rise in trade school enrollment will have long-term benefits for the sector. While increased wages have been a pain point for employers, higher wages should attract more people to construction apprenticeships and trade schools.
Public Health & Safety	While a combination of vaccines, immunity and therapeutics have improved the public health situation surrounding COVID-19, COVID-related disabilities are rising. According to the BLS, there were more than 1.5 million more disabled persons in 2022 than the previous year, of which nearly 1 million were active in the labor force. Labor shortages are also driving employers to hire less skilled and experienced workers for potentially hazardous positions, which may lead to more workplace injuries.	It is unclear how many of the newly disabled persons were in the construction sector, but given the physical nature of many construction occupations, it is likely that there is an outsized impact on the industry. Given how tight the current labor market is, construction employers are also more likely to hire less experienced workers than in a typical labor market, meaning workplace injury and risk will likely be elevated during this period.

Source: CBRE Strategic Investment Consulting, Q1 2023.

04

Implications for Construction Costs

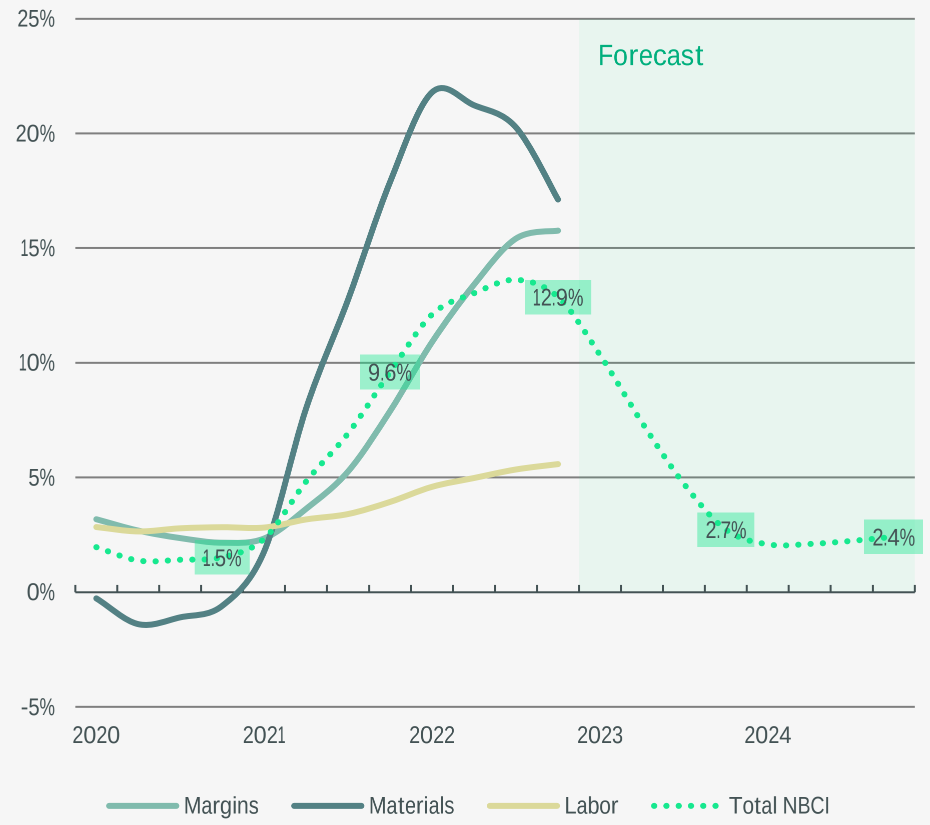
Annual escalation rates for the margins and labor components of the TCC/CBRE index leveled off in 2022 and materials slowed

We set out to create a new index that ultimately provides the full picture of construction costs borne by developers but is also more responsive to changes in input prices borne by contractors.

Although this index can also provide some insights for single-family residential, infrastructure and renovation construction segments, it is built to measure the total cost of new commercial buildings (including multifamily) to the developer. This emphasis is reflected in the name: TCC/CBRE New Building Cost Index, or NBCI.

The NBCI is composed of three sub-indices that separately measure historical changes in the three major cost components outlined in this report: activity & margins, materials & equipment, and labor. These sub-indices are then aggregated (with equal weighting) into a single measure of comprehensive construction costs (the NBCI) that can be statistically modeled to estimate future escalation rates. The basic structure of the NBCI was built with the flexibility to also estimate escalation rates for specific property types and geographic markets by adjusting the input data that makes up the sub-indices, as well as the forecasted variables that model the aggregate index forward (see box at right for more detail).

FIGURE 4.1: Year-over-year change (%) in TCC/CBRE New Building Cost Index (NBCI) by index component



Note: Data labels show the Q4 values.
Source: Bureau of Labor Statistics, Bureau of Economic Analysis, CoStar Group, Oxford Economics, CBRE Strategic Investment Consulting, Q1 2023.

TCC/CBRE NBCI Methodology

Each of the three NBCI sub-indices use proxy inputs to measure changes in margins-, materials-, and labor-related costs rather than a direct calculations of each of these cost components in dollar terms.

Each sub-index is a calculation across multiple input variables, but the primary inputs include:

Margins: real private fixed investment in new structures & amount of space under construction by property type and geography

Materials: Producer Price Indexes for various construction inputs, aligned to each property type

Labor: average hourly and weekly construction wages for each market

See appendix for more details on sources and methods.

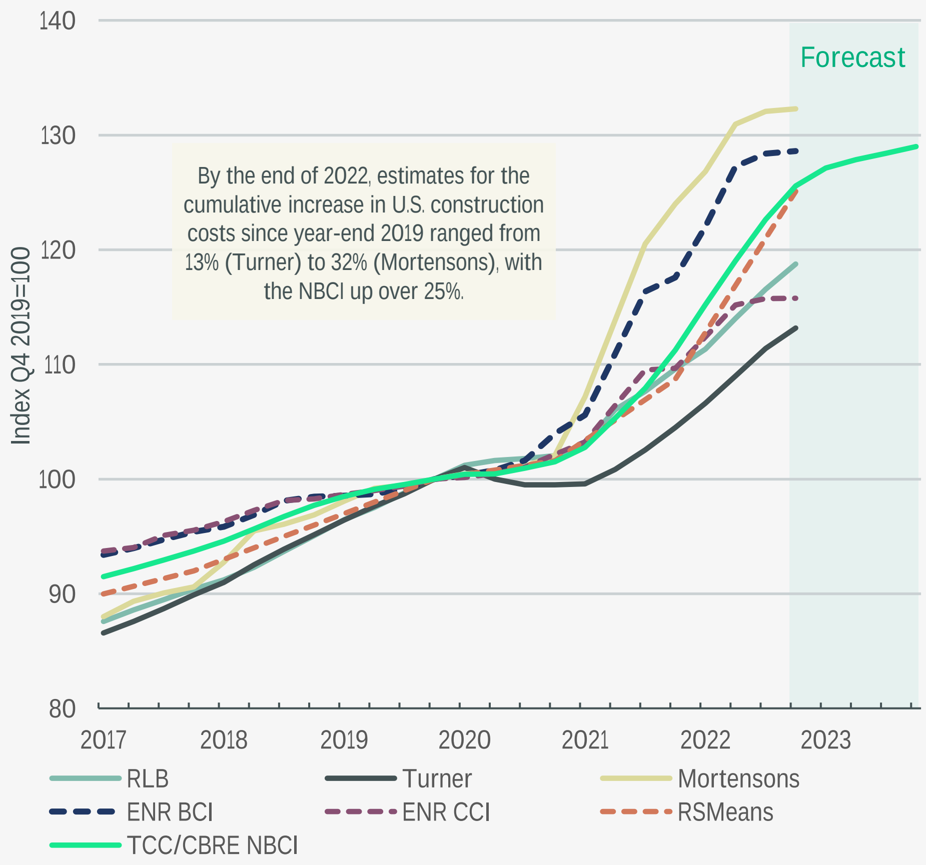
The NBCI has fallen roughly in the middle of major third-party indices

The spread in escalation rates reported by major indices widened to unprecedented levels in 2021 and tightened only a bit in 2022, reflecting variation in index methodologies, as well as measurement challenges.

Major indices can be grouped into two broad types: those based on bid costs (also referred to as "whole building", "final cost" or "selling price" indices) and those based on input costs (sometimes referred to as "measures of inflation"). Both types of indices are useful, depending on the questions and context, but input indices do not include any measure of contractor profit margins (and thus may not reflect trends for the full cost of final construction). Indices shown with a dashed line in Figure 4.2 are based on input costs, while solid lines (including NBCI) are based on bid costs.

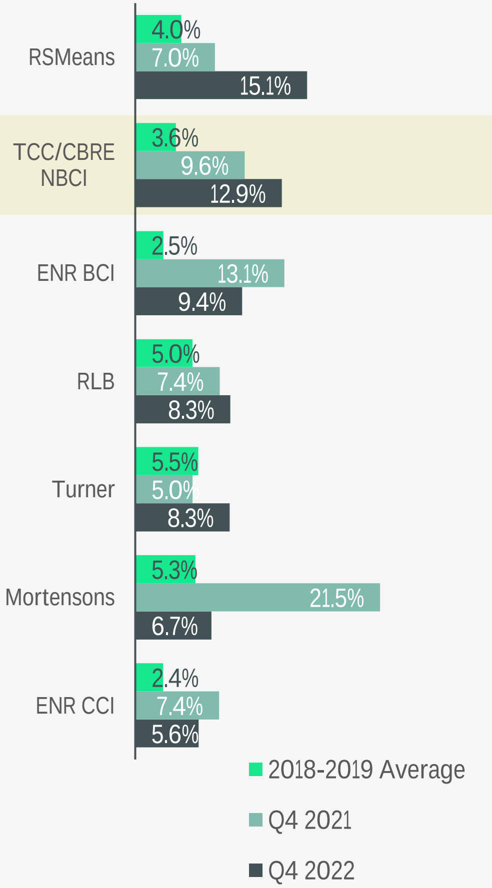
During periods of high inflation or volatility, bid cost indices may lag input-based indices, as contractors react gradually to new market conditions. Historically, all major construction cost indices have shown escalation rates of roughly 2%-4% annually. After two years of significant departure from this norm across nearly all major indices, average U.S. construction cost increases are expected to return to this range by the end of 2023.

FIGURE 4.2: Comparison of construction cost indices, TCC/CBRE NBCI vs. major industry benchmarks



Source: Engineering News-Record, Turner Construction, Rider Levett Bucknall, Mortensons, RS Means, CBRE Strategic Investment Consulting, March 2023.

FIGURE 4.3: Year-over-year change (%) in major construction cost indices



Source: See Figure 4.2.

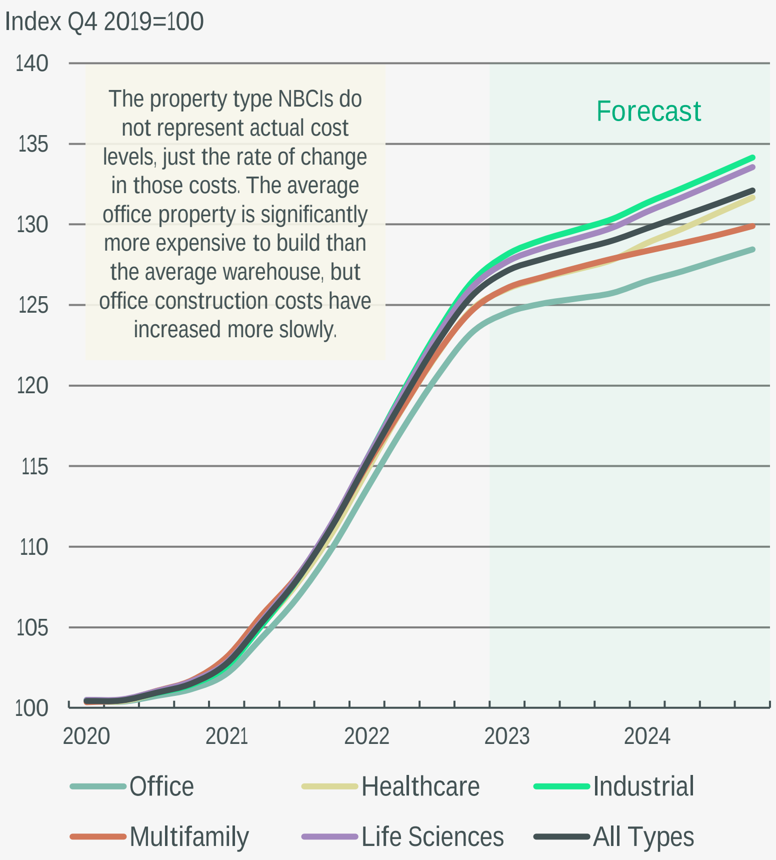
Construction costs have trended similarly across property types, but small differences have led to widening gaps over time

Multiple years of above-average levels of industrial development have caused construction costs for this sector to rise more quickly than for other property types (particularly office). Differences in materials utilization is also a factor in variation of cost changes.

Although the difference in escalation rates between the sectors has rarely exceeded roughly one percentage point on an annualized basis, over time, these differences have compounded. By year-end 2024, average U.S. industrial construction costs are projected to be 34% higher than year-end 2019 vs. 28% higher for average U.S. office construction costs.

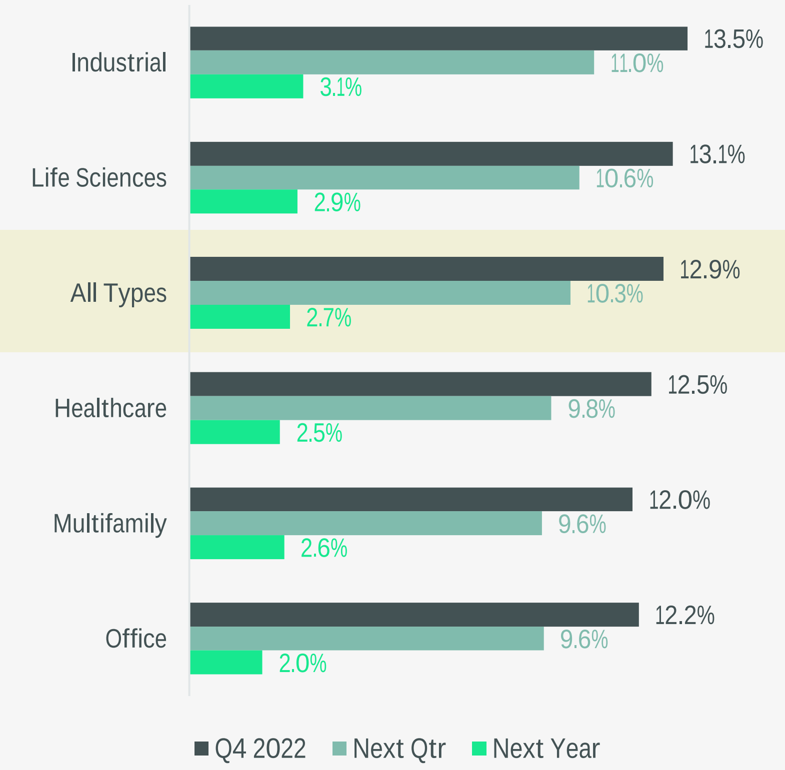
Nonetheless, though sector-specific conditions do have some impact on construction costs, variation in escalation rates across property types is relatively minimal because contractors rarely specialize in a single property type, and most construction materials and labor are utilized by all types of construction projects (i.e. construction activity within any sector will increase competition for all the others).

FIGURE 4.4: TCC/CBRE NBCI by property type



Source: Bureau of Labor Statistics, Bureau of Economic Analysis, CoStar Group, Oxford Economics, CBRE Strategic Investment Consulting, Q1 2023.

FIGURE 4.5: Year-over-year changes (%) in NBCI by property type, current period and near-term forecasts



Note: "Next Qtr" is the projected annual cost increase from Q1 2022 to Q1 2023; "Next Year" is Q4 2022 to Q4 2023.
Source: Bureau of Labor Statistics, Bureau of Economic Analysis, CoStar Group, Oxford Economics, CBRE Strategic Investment Consulting, Q1 2023.

Escalation rates were highest in Southern markets last year, but by year-end 2023 Western markets are expected to lead

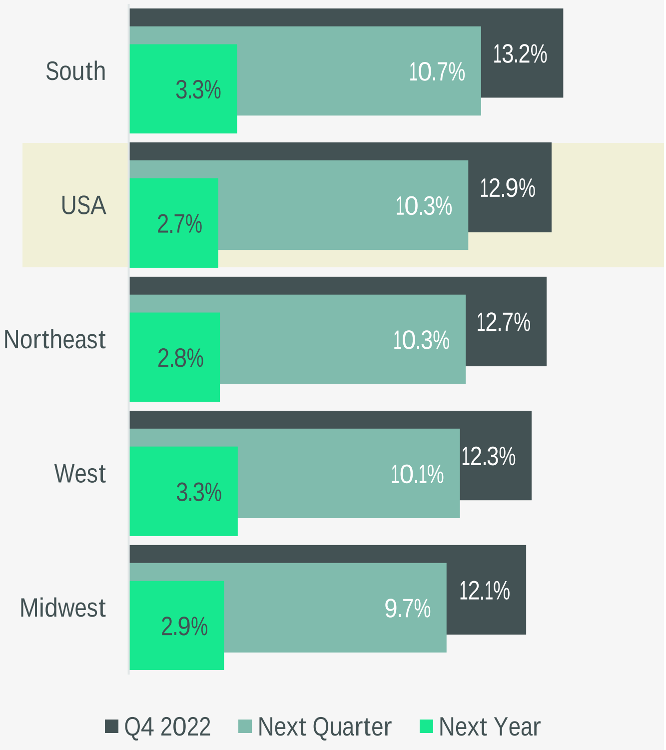
The pace of construction cost escalation varies more by market than by property type because differences in local and regional dynamics—chiefly construction demand and wage pressure—can significantly impact overall costs.

In recent years, construction costs have increased most in markets with substantial construction activity (particularly as a share of existing building stock) and where overall dollar costs and construction wages were relatively low. Many such markets were Sun Belt cities like Raleigh, Atlanta, and Phoenix. Escalation rates in Gateway cities have generally been on the slower end both because construction costs were already very high and because post-pandemic construction demand has been more muted in many of these markets.

By the end of the 2023, annual escalation rates are expected to settle below the historic norm of 4% in all TCC markets except Phoenix and Portland. In-depth coverage of market conditions and cost forecasts are provided in the local market profiles appendix.

FIGURE 4.6: Year-over-year changes (%) in NBCI by market and region, current period and near-term forecasts

Region	Market	Latest Actual (Q4 2022)	Next Quarter (Q1 2023)	Next Year (Q4 2023)
Midwest	Chicago	12.6%	10.2%	2.9%
	St. Louis	12.2%	8.7%	2.3%
	Minneapolis	12.2%	10.1%	3.6%
	Kansas City	11.7%	9.9%	3.0%
	Madison	11.7%	9.4%	2.6%
Northeast	New Jersey	12.9%	10.5%	2.2%
	Philadelphia	12.8%	10.3%	3.3%
	Boston	12.5%	10.0%	2.9%
South	Raleigh	14.6%	11.9%	3.8%
	Atlanta	13.6%	11.0%	3.8%
	Dallas	13.4%	10.9%	3.2%
	Washington, D.C.	12.8%	10.2%	2.1%
	Houston	12.6%	10.3%	3.5%
	Austin	12.4%	10.1%	3.3%
West	Phoenix	13.4%	10.9%	4.5%
	Denver	12.9%	10.4%	2.7%
	Newport Beach	12.7%	10.3%	3.0%
	Portland	12.6%	10.5%	4.4%
	Seattle	12.2%	10.2%	2.9%
	Los Angeles	11.8%	9.7%	3.4%
	San Francisco	11.7%	9.6%	2.8%
	San Jose	11.7%	9.6%	2.8%
	San Diego	11.4%	9.5%	3.4%



Source: Bureau of Labor Statistics, Bureau of Economic Analysis, CoStar Group,, Oxford Economics, CBRE Strategic Investment Consulting, Q1 2023.

Going forward, materials-related factors are likely to shift from the most significant cost drivers to the least

Figure 4.7 (at right) is based on responses from surveyed general contractors about their expectations for a series of factors that may **negatively impact their firms' profitability in the near-**term.

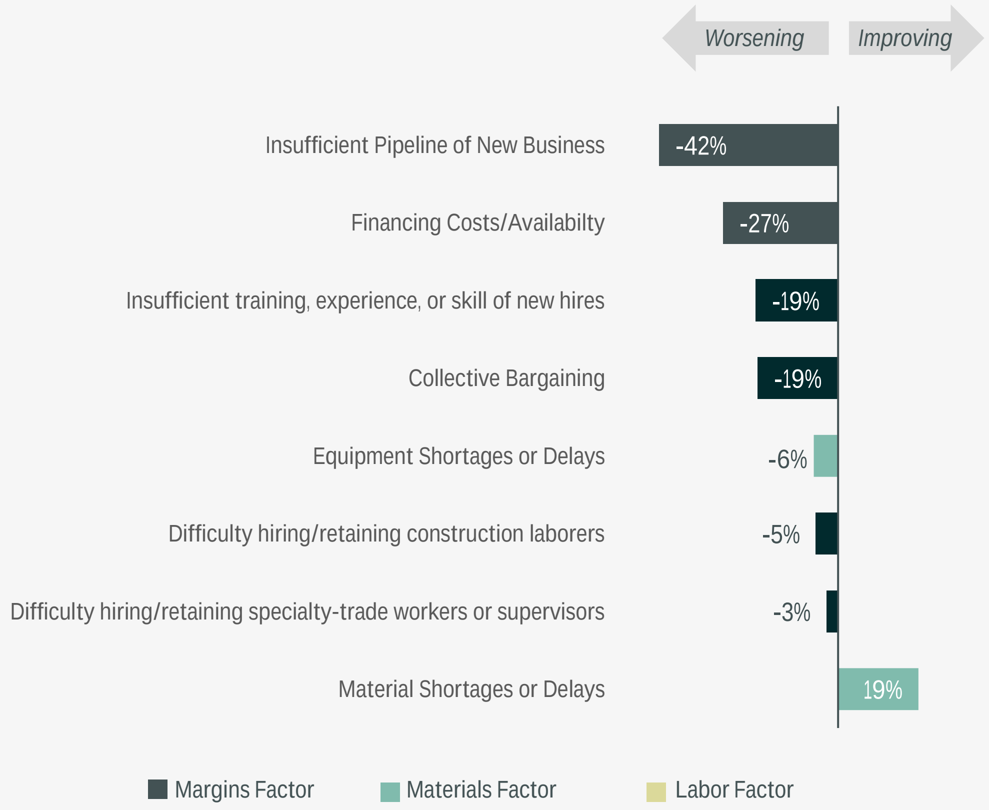
The figure shows the difference between the share of respondents who expect a given factor to improve less the share who expect it to worsen—if the resulting share is positive this implies net improvement. For all but one factor (collective bargaining), some portion of respondents expect near-term improvement. However, for all factors but one (material shortages/delays), a larger share of respondents expect worsening than expect improvement.

For materials and labor factors, expectations for net worsening will typically be correlated with higher construction cost escalation rates. For margins-related factors, the opposite is true. Through the near-term, the significant expected deterioration in GC's business pipelines and access to credit plus expected improvement in material shortages should outweigh the more modest expectations around continued labor and equipment challenges. The combined effect should be slowing construction cost escalation, though actual cost decreases are largely not anticipated.

The full set of GC business impact responses over the prior- and next-three-month periods is detailed on the following page.

FIGURE 4.7: TCC/CBRE Contractor Survey

Among factors negatively impacting firm profitability, expectations for net improvement (% responding factor will improve - % responding factor will worsen) over the next three (3) months



Source: Various Contractors, CBRE Strategic Investment Consulting, March 2023

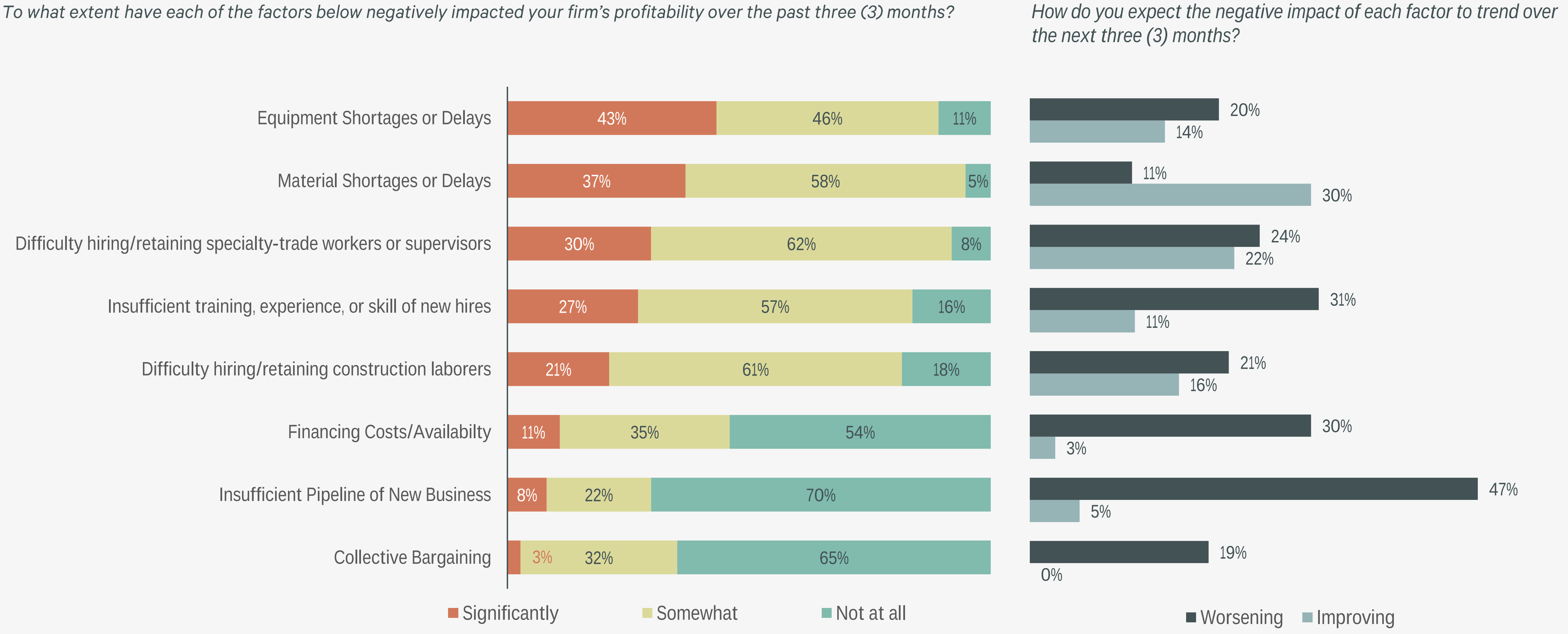
Notable TCC/CBRE Contractor Survey responses:

5% of respondents expect their new business pipelines to improve but 47% expect them to worsen, implying net worsening of 42%. This is a big shift from the prior three months, when 70% indicated that an insufficient **pipeline hadn't had any negative** impact on profitability.

30% of respondents expect materials shortages to improve and just 11% expect them to worsen, implying net improvement of 19%. Over the prior three months, just 5% of respondents indicated that this factor had had no negative impact on profitability, so there is ample room for improvement.

In both examples (net worsening in new business and net improvement in materials shortages), the expected shift should slow the rate of construction cost escalation.

FIGURE 4.8: TCC/CBRE Contractor Survey



Source: Various Contractors, CBRE Strategic Investment Consulting, March 2023

05

Local Market Profiles

Local market profiles

The following pages provide detailed cost growth estimates, contractor survey findings, local construction trends and key factors driving building costs in each of the markets listed to the right.

TCC/CBRE's New Building Cost Index (NBCI) is shown on the first page of each profile to demonstrate how costs have risen in that market for each property type since the onset of the pandemic in 2020. The first page also contains a brief analysis of current trends impacting the local market, as well as key findings from TCC/CBRE's Contractor Survey. In markets with limited or no responses for certain survey questions, trends from nearby markets or the broader region are shown.

The second page of each profile can be used to understand the drivers of cost change in each market. The table provided can be used to estimate future project costs for the next two years. Simply multiply any $/SF estimate (as of Q4 2022) by the appropriate property type and time period of interest to find the dollar-value estimate of that cost in the future. An example is provided above the chart.

Atlanta

13.6% Cost Growth – Last 12 Months
% Change in NBCI Q4 2021-Q4 2022
Rank #2, U.S. = 12.9%

3.8% Cost Growth – Next 12 Months
% Change in NBCI Q4 2022-Q4 2023
Rank #4, U.S. = 2.7%

4.7% % of NRA Under Construction
As of Q4 2022
Rank #7, U.S. = 3.5%

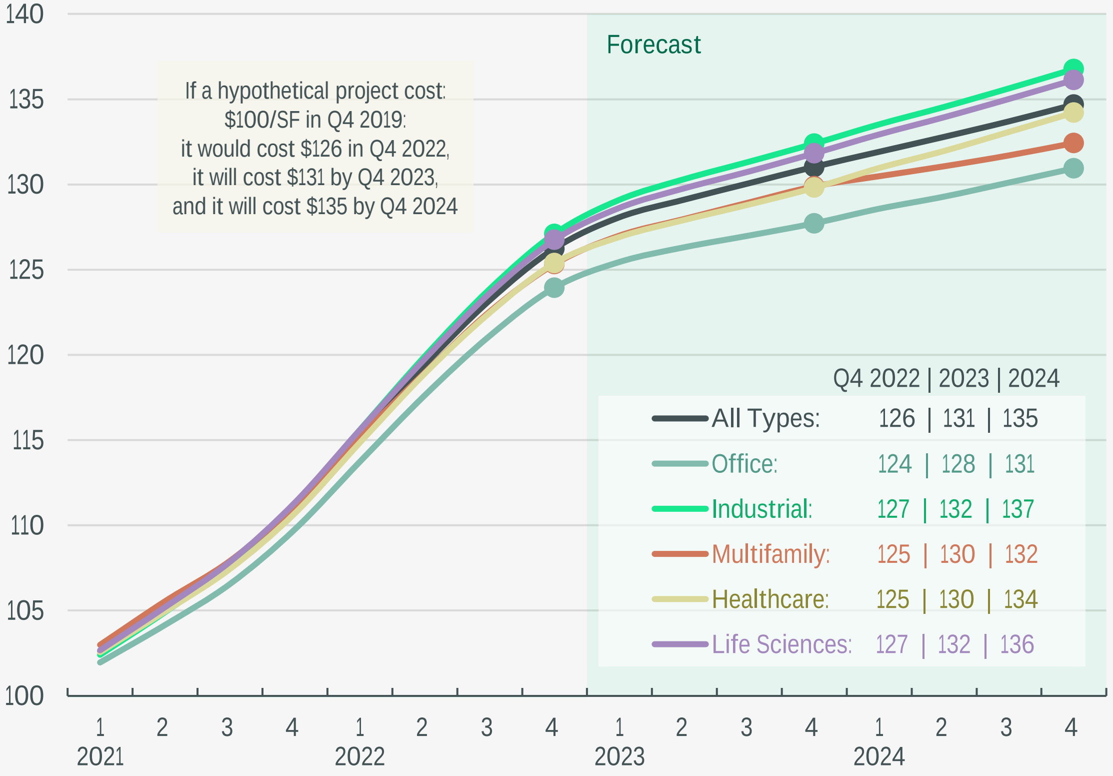
Atlanta ranks among the fastest-growing metros in the U.S. across many metrics, which is putting significant upward pressure on construction costs. The market had the 2nd highest year-over-year growth in the NBCI and the NBCI is expected to continue to rise faster than most other markets through 2023 as more projects break ground.

Being a major transportation and logistics hub, industrial construction demand is especially high in Atlanta. Infrastructure projects at and around Hartsfield-International Airport are also driving demand for work from similar contractors. Office construction has slowed the fastest in the past year, but a significant volume remains underway, especially build-to-suit projects for corporate headquarters, education and government users. Science Square Labs at Science Square Park is the largest life sciences project underway and will add 360,000-sq.-ft. of lab/office on the northwest edge of Downtown Atlanta. Adjacent to the Georgia Tech campus, it will be the first urban science park in Atlanta.

Ongoing residential development will be key as the region continues to add to its rapidly growing population. More than 100 large (200-unit plus) developments are underway or expected to break ground soon, making it one of the most active multifamily markets in the U.S.

High demand across property types has put increased pressure on wages as builders and contractors struggle to find suitable workers. Although the median construction wage in Atlanta is on the low end nationally (due largely to low union representation), wages are growing significantly faster than nearly all other major markets. Though total cost inflation is expected to rise at a slower pace in the coming quarters, continued above-average wage growth and builder demand are expected to keep Atlanta's cost growth elevated compared to most other markets.

TCC/CBRE New Building Cost Index (NBCI) by Property Type (2019 Q4 = 100)



Source: Bureau of Labor Statistics, Bureau of Economic Analysis, CoStar Group, Oxford Economics, CBRE Strategic Investment Consulting, Q1 2023.

GC expectations for the next 3 months:

- Lead times for concrete and electrical are expected to lengthen
- Lead times for other key materials will remain similar to recent months
- Materials cost inflation for concrete, masonry and electrical will slow from last quarter
- Materials cost inflation for other categories will be similar to the recent pace of growth
- Labor costs will rise but at a slower pace than last quarter
- Under Construction Sq. Ft. will largely keep pace with last quarter

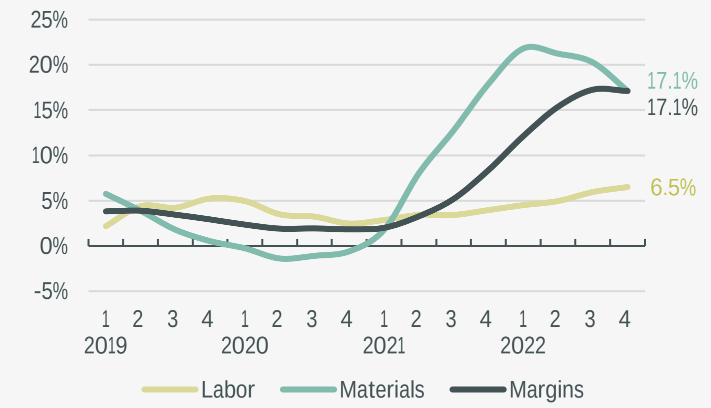
Atlanta

CONSTRUCTION COST BREAKDOWN

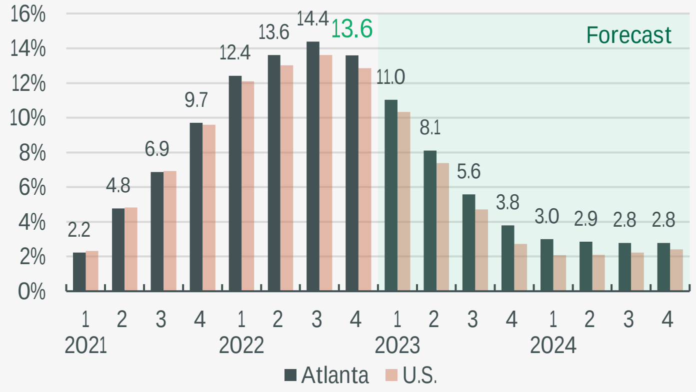
Interpret the charts below:
In Q4 2022, total new building costs increased by 13.6% since Q4 2021.
Labor costs grew by 6.5%, Materials by 17.1%, and Margins by 17.1% over the same period.

Example for using the table below:
If a new office project in Atlanta cost $200/SF in Q4 2022,
then it is expected to cost $204.93/SF in Q3 2023, a 2.5% total increase.

Cost Growth (Year-over-Year %) By Cost Component



NBCI Growth (Year-over-Year %) – Market vs. U.S.

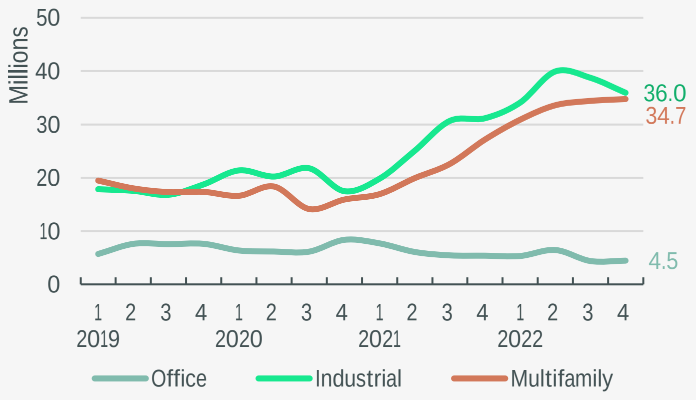


Forecasted NBCI Growth by Property Type – Next 2 Years

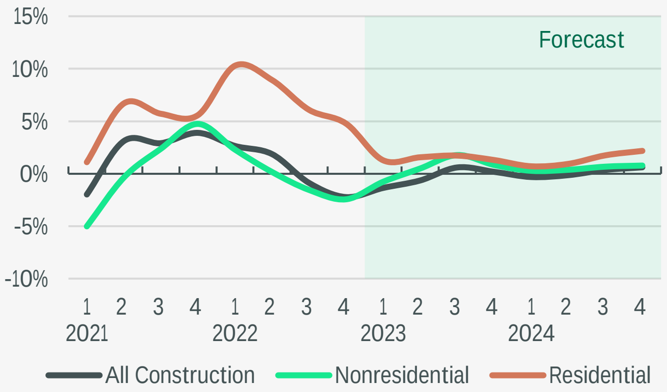
	Cumulative % Change from Q4 2022							
Property Type	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024
Office	1.2%	1.9%	2.5%	3.0%	3.7%	4.3%	5.0%	5.6%
Industrial	1.6%	2.5%	3.3%	4.2%	5.1%	5.9%	6.7%	7.6%
Multifamily	1.3%	2.1%	2.9%	3.6%	4.1%	4.6%	5.1%	5.7%
Healthcare	1.2%	2.0%	2.7%	3.5%	4.5%	5.2%	6.1%	7.0%
Life Sciences	1.5%	2.4%	3.2%	4.0%	4.9%	5.7%	6.5%	7.4%
Total Market	1.5%	2.3%	3.0%	3.8%	4.5%	5.2%	5.9%	6.7%
U.S. Average	1.2%	1.8%	2.3%	2.7%	3.3%	3.9%	4.6%	5.2%

KEY LOCAL MARKET FACTORS

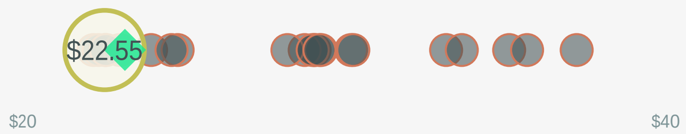
Sq. Ft. Under Construction by Property Type



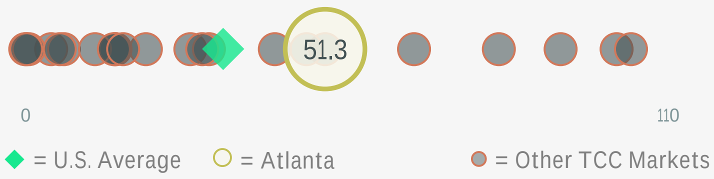
Job Growth (Year-over-Year %) by Subsector



Median Hourly Wage - Construction Occupations



Active Construction Apprenticeships per 1,000 Workers



Note: Life Sciences under construction is included in office or industrial (depending on primary use type)

Sources: Oxford Economics, Costar Group, Bureau of Economic Analysis, Bureau of Labor Statistics, Department of Labor, CBRE Strategic Investment Consulting, Q4 2022

Austin

12.4% Cost Growth – Last 12 Months
% Change in NBCI Q4 2021-Q4 2022
Rank #14, U.S. = 12.9%

3.3% Cost Growth – Next 12 Months
% Change in NBCI Q4 2022-Q4 2023
Rank #9, U.S. = 2.7%

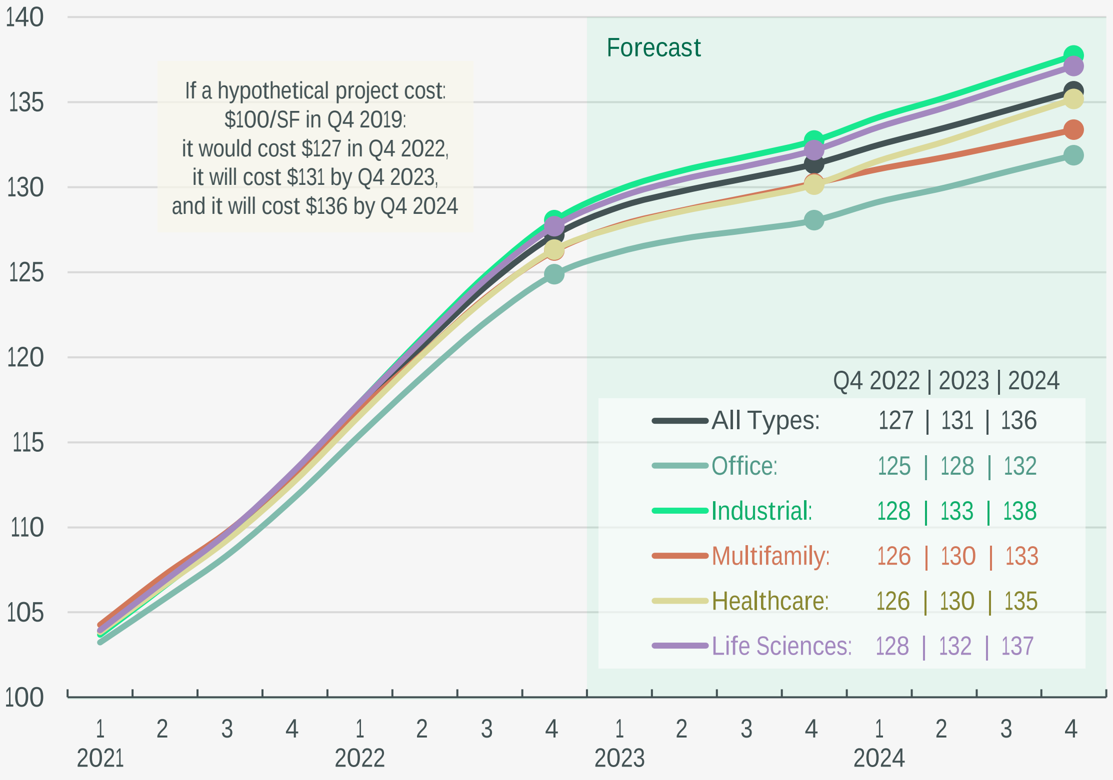
11.7% % of NRA Under Construction
As of Q4 2022
Rank #1, U.S. = 3.5%

Austin has been one of the most active construction markets in recent years, driven by a boom in the high-tech sector and population growth. Though the NBCI for Austin shows slower year-over-year cost growth than other markets at the end of Q4 2022, cumulative growth has been noticeably higher in Austin because of the immense amount of construction activity in recent years. Since the end of 2019, Austin has had the second-highest cumulative cost growth (27.2%).

The market is unlikely to cool any time soon as more large projects are in the pipeline, including the $17-billion, 1.2-million-sq.-ft. Samsung semiconductor manufacturing plant that broke ground in early 2023 in Taylor. Presidium Group LLC is expected to begin construction on its massive 7-million-sq.-ft. mixed-use project named Velocity in Southeast Austin. The project took a step forward in October 2023 when the Austin Planning Commission approved the updated plans for the project, which is set to include 3.3 million sq. ft. of office space, 3,000 multifamily housing units and an additional ±1 million sq. ft. of creative and other commercial space uses.

Unlike in other markets, Austin has also attracted a lot of office development. Only Boston and Seattle have more office product underway, but the existing office inventory in each of those markets is nearly double that of Austin. Tech giants are driving much of the expansion. Trammell Crow Company and MSD Capital LP recently completed a 35-story, 800,000-sq.-ft. office building that was pre-leased by Google. Apple is also partially through developing its 33-acre campus in Northwest Austin. In 2022, nearly 1 million sq. ft. of office and flex space was delivered on the site, and phase two is set to begin later in 2023 which will add another 419,000 sq. ft. of office across two buildings.

TCC/CBRE New Building Cost Index (NBCI) by Property Type (2019 Q4 = 100)



Source: Bureau of Labor Statistics, Bureau of Economic Analysis, CoStar Group, Oxford Economics, CBRE Strategic Investment Consulting, Q1 2023.

GC expectations for the next 3 months:

- ▲ Lead times for openings, equipment, plumbing, HVAC, electrical and thermal/moisture protections are expected to increase
- ► Lead times for other key materials will remain similar to recent months
- ▲ A shortage is expected for electrical equipment
- ► Materials cost inflation for all categories will be similar to the recent pace
- ► Labor costs will rise but at the same pace as last quarter
- ▲ Under Construction Sq. Ft. will increase slightly with ample starts in Q1 2023

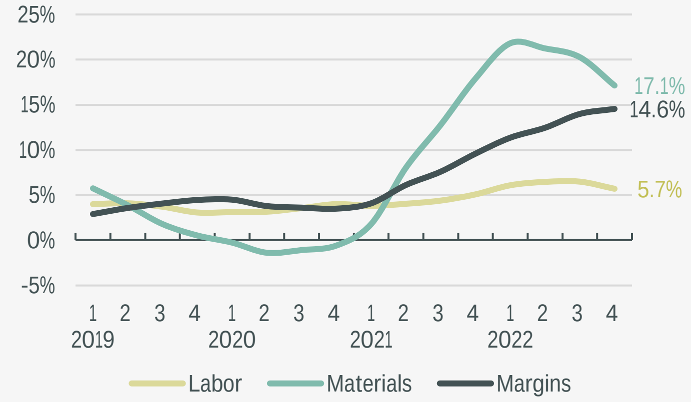
Austin

CONSTRUCTION COST BREAKDOWN

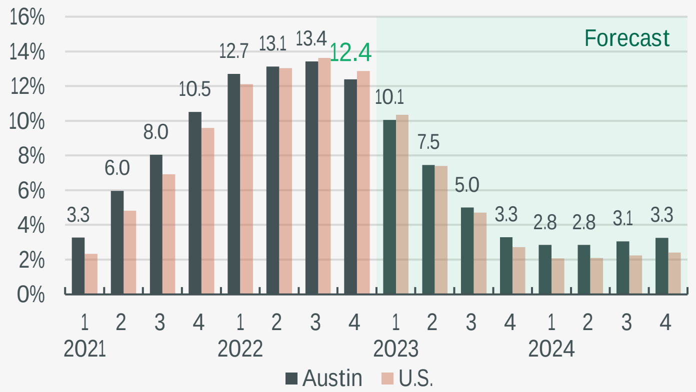
Interpret the charts below:
In Q4 2022, total new building costs increased by 12.4% since Q4 2021.
Labor costs grew by 5.7%, Materials by 17.1%, and Margins by 14.6% over the same period.

Example for using the table below:
If a new office project in [Market] cost $200/SF in Q4 2022,
then it is expected to cost $204.19/SF in Q3 2023, a 2.1% total increase.

Cost Growth (Year-over-Year %) By Cost Component



NBCI Growth (Year-over-Year %) – Market vs. U.S.

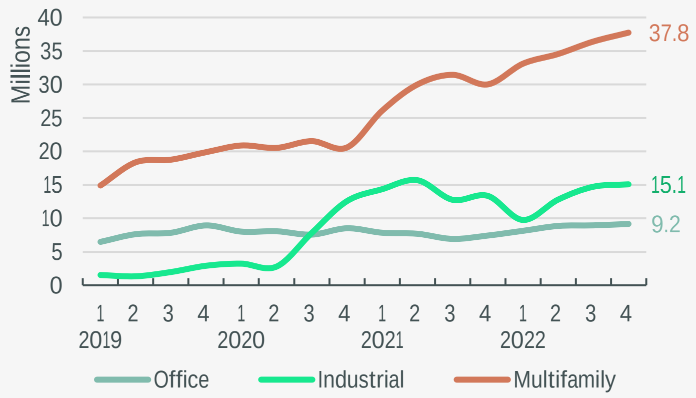


Forecasted NBCI Growth by Property Type – Next 2 Years

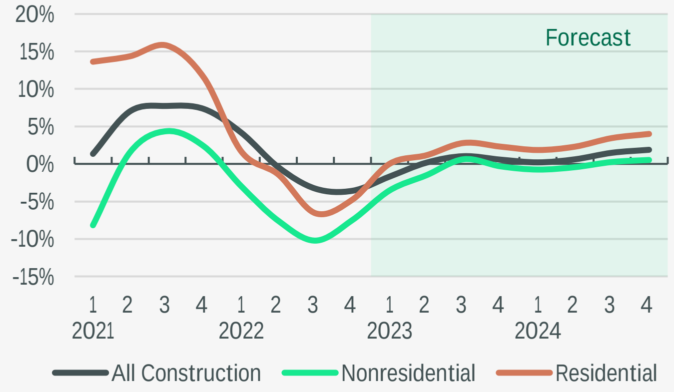
	Cumulative % Change from Q4 2022							
Property Type	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024
Office	1.1%	1.7%	2.1%	2.5%	3.4%	4.1%	4.9%	5.6%
Industrial	1.4%	2.3%	3.0%	3.7%	4.7%	5.6%	6.6%	7.6%
Multifamily	1.2%	1.9%	2.5%	3.1%	3.8%	4.4%	5.0%	5.6%
Healthcare	1.1%	1.8%	2.4%	3.0%	4.1%	5.0%	6.0%	7.0%
Life Sciences	1.3%	2.2%	2.8%	3.5%	4.6%	5.5%	6.4%	7.4%
Total Market	1.3%	2.1%	2.7%	3.3%	4.2%	5.0%	5.8%	6.6%
U.S. Average	1.2%	1.8%	2.3%	2.7%	3.3%	3.9%	4.6%	5.2%

KEY LOCAL MARKET FACTORS

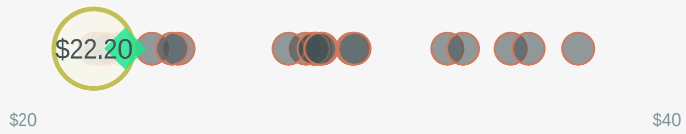
Sq. Ft. Under Construction by Property Type



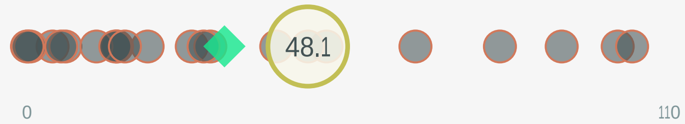
Job Growth (Year-over-Year %) by Subsector



Median Hourly Wage - Construction Occupations



Active Construction Apprenticeships per 1,000 Workers



◆ = U.S. Average ○ = Austin ● = Other TCC Markets

Note: Life Sciences under construction is included in office or industrial (depending on primary use type)

Sources: Oxford Economics, Costar Group, Bureau of Economic Analysis, Bureau of Labor Statistics, Department of Labor, CBRE Strategic Investment Consulting, Q4 2022

Boston

12.5% Cost Growth – Last 12 Months
% Change in NBCI Q4 2021-Q4 2022
Rank #13, U.S. = 12.9%

2.9% Cost Growth – Next 12 Months
% Change in NBCI Q4 2022-Q4 2023
Rank #15, U.S. = 2.7%

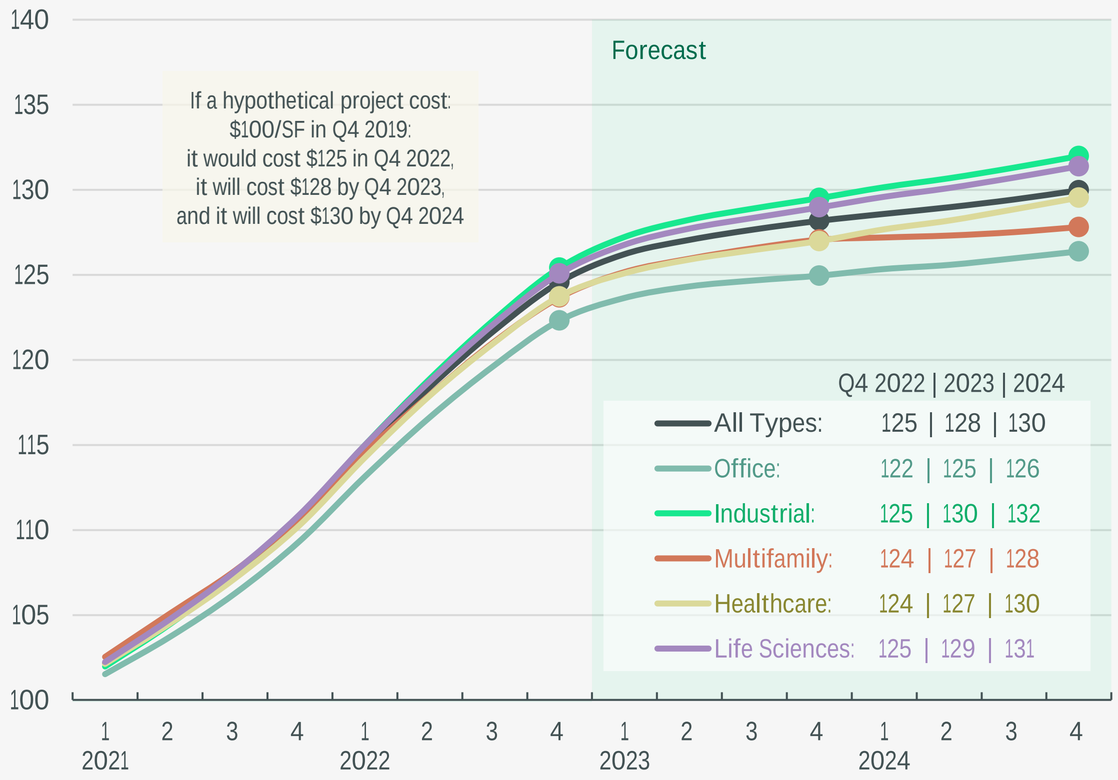
4.4% % of NRA Under Construction
As of Q4 2022
Rank #8, U.S. = 3.5%

More than any other market, Boston is known for its massive life sciences sector and development of the property type is as active as ever. An estimated 10 million sq. ft. of office/industrial lab space is underway as of early 2023. In Q4 2022, BioMed Realty broke ground on their 600,000-sq.-ft. office/lab facility called 585 Third in East Cambridge. Alexandria Real Estate also started the 550,000-sq.-ft. Alexandria Center for Life Science near Fenway. Both projects are set to deliver in 2025-2026. WS Development is expected to begin construction on the 430,000-sq.-ft. Seaport Labs project, adding to the more than 7 million sq. ft. of residential and commercial space already at the site. Lincoln Property Company is also set to break ground on Seaport Circle in 2023, which would add another ±650,000 sq. ft. nearby.

More than half of Boston's active office constructed is at least partial lab space, but that still leaves a relatively large amount of traditional office underway. Office is still in high demand in Boston, which boasts the lowest vacancy rate of any of the markets in this report. The largest active office project is One Congress, which is just over one million sq. ft. and is almost entirely pre-leased by InterSystems Corporation and State Street. The building is set to deliver in Spring 2023. WS Development is also underway on a 700,000-sq.-ft. office tower which is pre-leased to Amazon and expected to deliver in 2024.

Nearly half of Boston's active industrial construction is a 3.8-million-sq.-ft. Amazon facility in North Andover, which is slated to deliver in the summer of 2023. While there will likely be some other large projects that break ground in 2023, it is unlikely they will cover the size of the Amazon facility, meaning there may be some slowing in industrial construction activity this year.

TCC/CBRE New Building Cost Index (NBCI) by Property Type (2019 Q4 = 100)



Source: Bureau of Labor Statistics, Bureau of Economic Analysis, CoStar Group, Oxford Economics, CBRE Strategic Investment Consulting, Q1 2023.

GC expectations for the next 3 months:

- Lead times for all materials will remain similar to recent months
- A shortage is expected for finishes, HVAC and electrical
- Materials cost inflation will escalate slightly for finishes and equipment
- Materials cost inflation for other categories will be similar to the recent pace of growth
- Labor costs will rise but at the same pace as last quarter
- Under Construction Sq. Ft. will largely keep pace with last quarter

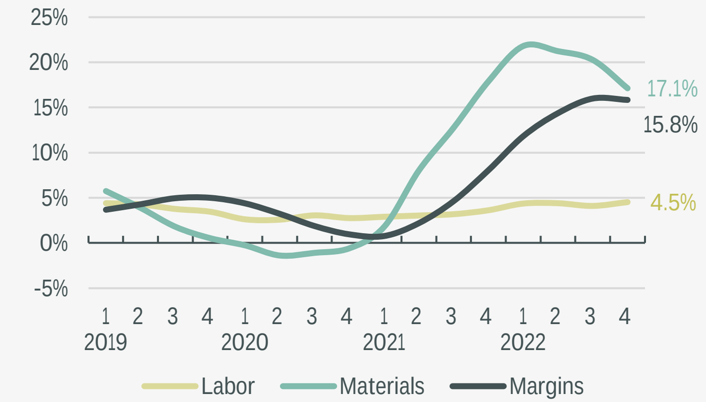
Boston

CONSTRUCTION COST BREAKDOWN

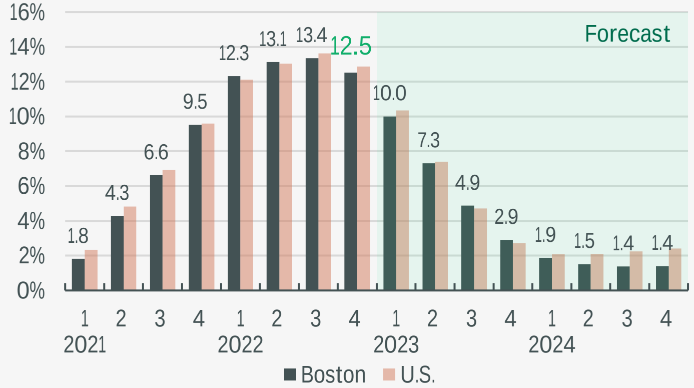
Interpret the charts below:
In Q4 2022, total new building costs increased by 12.5% since Q4 2021.
Labor costs grew by 4.5%, Materials by 17.1%, and Margins by 15.8% over the same period.

Example for using the table below:
If a new office project in Boston cost $200/SF in Q4 2022,
then it is expected to cost $203.86/SF in Q3 2023, a 1.9% total increase.

Cost Growth (Year-over-Year %) By Cost Component



NBCI Growth (Year-over-Year %) – Market vs. U.S.

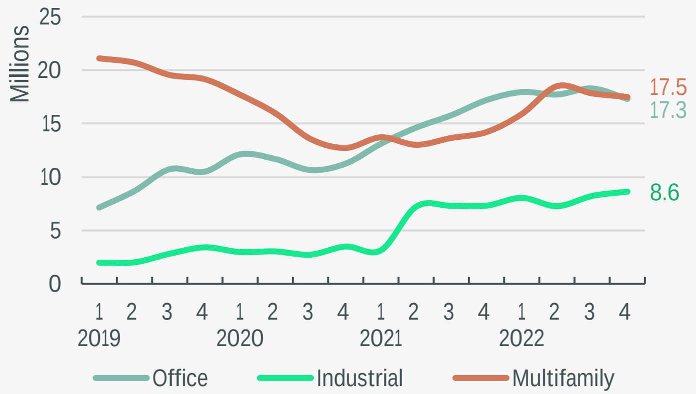


Forecasted NBCI Growth by Property Type – Next 2 Years

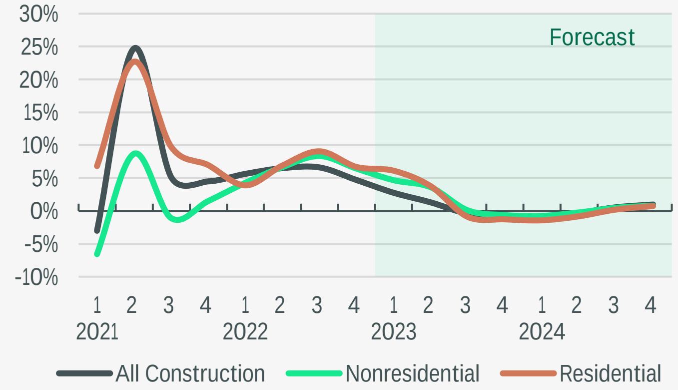
Property Type	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024
	Cumulative % Change from Q4 2022							
Office	1.1%	1.6%	1.9%	2.2%	2.5%	2.7%	3.0%	3.3%
Industrial	1.4%	2.3%	2.8%	3.3%	3.8%	4.2%	4.7%	5.2%
Multifamily	1.2%	1.8%	2.4%	2.7%	2.9%	2.9%	3.1%	3.3%
Healthcare	1.1%	1.7%	2.2%	2.6%	3.2%	3.6%	4.1%	4.7%
Life Sciences	1.4%	2.1%	2.6%	3.1%	3.6%	4.0%	4.5%	5.0%
Total Market	1.3%	2.0%	2.5%	2.9%	3.2%	3.5%	3.9%	4.3%
U.S. Average	1.2%	1.8%	2.3%	2.7%	3.3%	3.9%	4.6%	5.2%

KEY LOCAL MARKET FACTORS

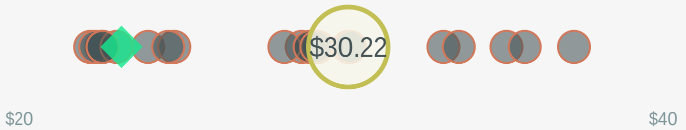
Sq. Ft. Under Construction by Property Type



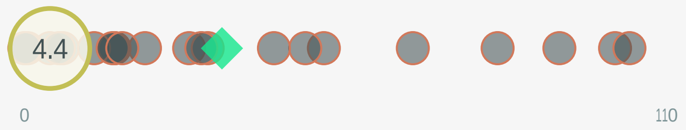
Job Growth (Year-over-Year %) by Subsector



Median Hourly Wage - Construction Occupations



Active Construction Apprenticeships per 1,000 Workers



= U.S. Average = Boston = Other TCC Markets

Note: Life Sciences under construction is included in office or industrial (depending on primary use type)

Sources: Oxford Economics, Costar Group, Bureau of Economic Analysis, Bureau of Labor Statistics, Department of Labor, CBRE Strategic Investment Consulting, Q4 2022

Chicago

12.6% Cost Growth – Last 12 Months
% Change in NBCI Q4 2021-Q4 2022
Rank #10, U.S. = 12.9%

2.9% Cost Growth – Next 12 Months
% Change in NBCI Q4 2022-Q4 2023
Rank #14, U.S. = 2.7%

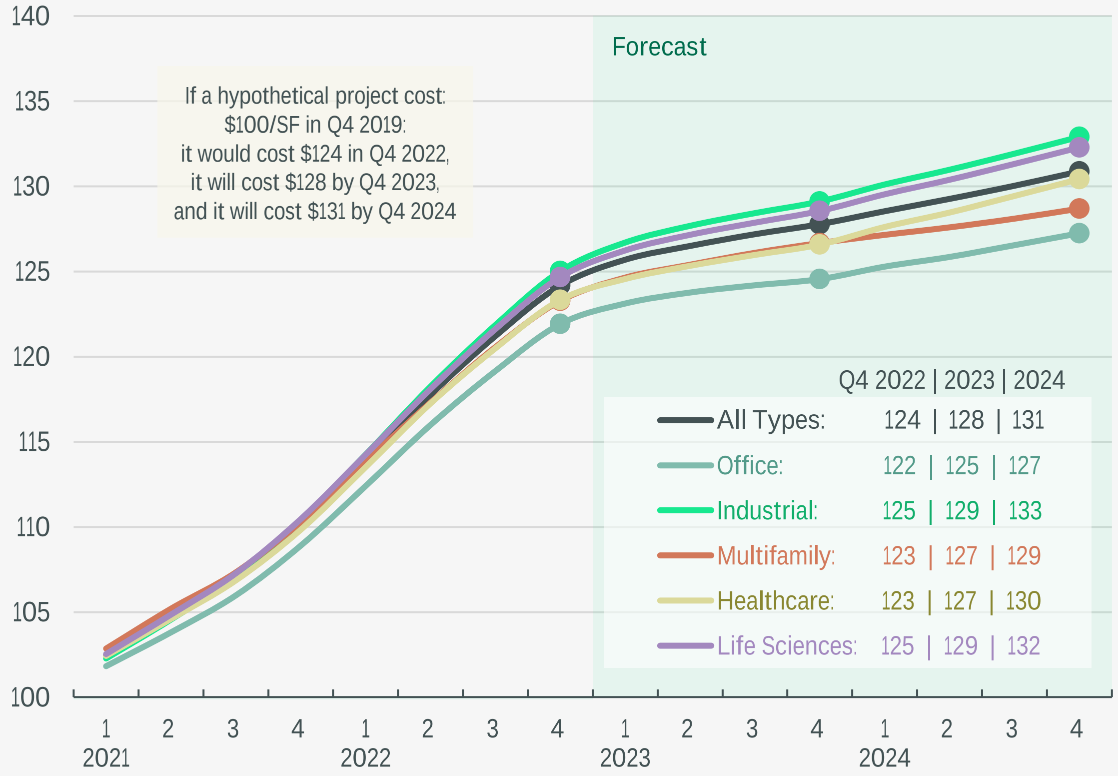
2.5% % of NRA Under Construction
As of Q4 2022
Rank #19, U.S. = 3.5%

Chicago is the largest industrial market in the U.S. and has the third most industrial construction underway among markets in this report. The largest active industrial project is Facebook's DeKalb Data Center, which will stand at 2.4 million sq. ft. when completed in Spring 2023. Among traditional distribution projects, Walmart's 1.5-million-sq.-ft. center in Minooka broke ground in 2022 and is expected to deliver in late 2023. Target has also pre-leased a 1.2-million-sq.-ft. facility that is expected to deliver in summer 2023 in Joliet at the Third Coast Intermodal Hub. Two other buildings totaling 2.2 million sq. ft. are also actively underway at the site, both of which are still available. Though a large volume is set to deliver this year, more is expected to break ground in 2023, four of which exceed 2 million sq. ft. each.

More than one-third of the office construction activity is from the 1.2-million-sq.-ft. Salesforce Tower Chicago in River North, which is expected to deliver in the first half of 2023. Though a secondary life sciences market, several large project office/lab projects are underway, two of which broke ground early in 2023. Hyde Park Labs in South Chicago is a unique partnership with the University of Chicago, Beacon Capital Partners and TCC. The project will include incubator and graduation suites in the 302,000-sq.-ft. 13-story tower. TCC also broke ground on Evanston Labs, which will add 207,000 sq. ft. of office/lab across 10 stories in Evanston.

Labor costs have been slower to increase in Chicago, but that is likely to change in 2023. Chicago is the most unionized of all markets in this report, and it is expected that some collective bargaining agreements (CBA) will be renegotiated and drive sharper increases in union wages in 2023.

TCC/CBRE New Building Cost Index (NBCI) by Property Type (2019 Q4 = 100)



Source: Bureau of Labor Statistics, Bureau of Economic Analysis, CoStar Group, Oxford Economics, CBRE Strategic Investment Consulting, Q1 2023.

GC expectations for the next 3 months:

- Lead times for concrete and electrical are expected to increase
- Lead times for other key materials will be similar to recent months
- A shortage is expected for concrete and electrical
- Materials cost inflation is expected to be 100-300 bps higher across the board
- Labor cost increases are expected to accelerate
- Under Construction Sq. Ft. will increase slightly with ample starts in Q1 2023

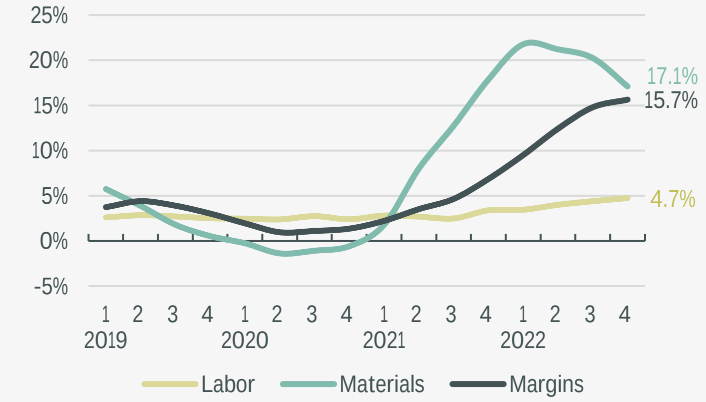
Chicago

CONSTRUCTION COST BREAKDOWN

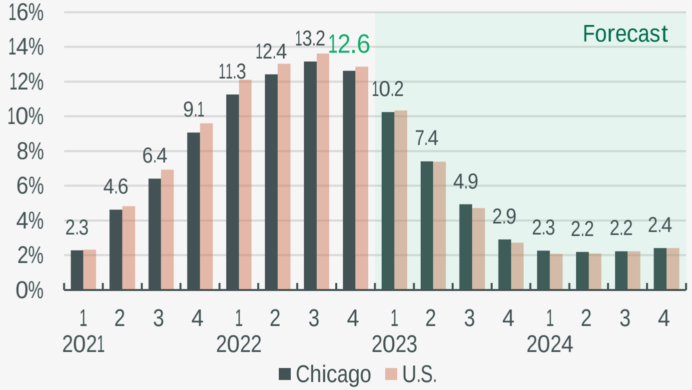
Interpret the charts below:
In Q4 2022, total new building costs increased by 12.6% since Q4 2021.
Labor costs grew by 4.7%, Materials by 17.1%, and Margins by 15.7% over the same period.

Example for using the table below:
If a new office project in Chicago cost $200/SF in Q4 2022,
then it is expected to cost $203.73/SF in Q3 2023, a 1.9% total increase.

Cost Growth (Year-over-Year %) By Cost Component



NBCI Growth (Year-over-Year %) – Market vs. U.S.

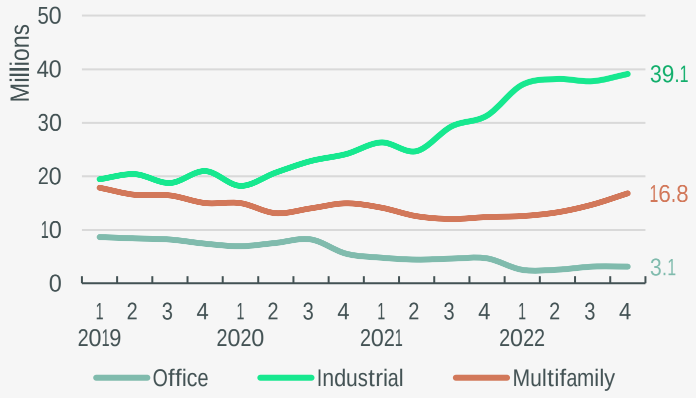


Forecasted NBCI Growth by Property Type – Next 2 Years

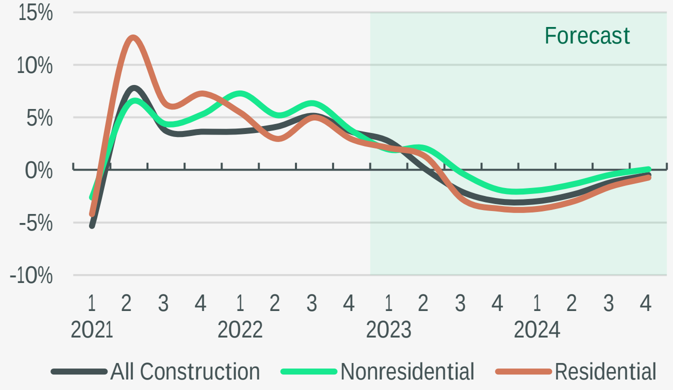
	Cumulative % Change from Q4 2022							
Property Type	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024
Office	1.0%	1.5%	1.9%	2.2%	2.8%	3.2%	3.8%	4.4%
Industrial	1.3%	2.1%	2.7%	3.3%	4.1%	4.8%	5.5%	6.3%
Multifamily	1.1%	1.7%	2.3%	2.8%	3.1%	3.5%	3.9%	4.4%
Healthcare	1.0%	1.6%	2.1%	2.6%	3.5%	4.2%	5.0%	5.7%
Life Sciences	1.3%	2.0%	2.6%	3.1%	3.9%	4.6%	5.3%	6.1%
Total Market	1.2%	1.9%	2.4%	2.9%	3.5%	4.1%	4.7%	5.4%
U.S. Average	1.2%	1.8%	2.3%	2.7%	3.3%	3.9%	4.6%	5.2%

KEY LOCAL MARKET FACTORS

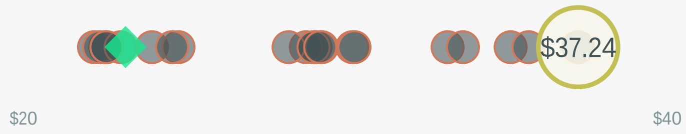
Sq. Ft. Under Construction by Property Type



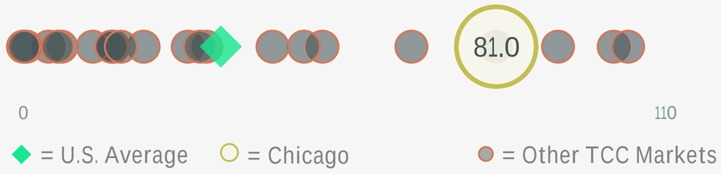
Job Growth (Year-over-Year %) by Subsector



Median Hourly Wage - Construction Occupations



Active Construction Apprenticeships per 1,000 Workers



Note: Life Sciences under construction is included in office or industrial (depending on primary use type)

Sources: Oxford Economics, Costar Group, Bureau of Economic Analysis, Bureau of Labor Statistics, Department of Labor, CBRE Strategic Investment Consulting, Q4 2022

Dallas

13.4% Cost Growth – Last 12 Months
% Change in NBCI Q4 2021-Q4 2022
Rank #4, U.S. = 12.9%

3.2% Cost Growth – Next 12 Months
% Change in NBCI Q4 2022-Q4 2023
Rank #11, U.S. = 2.7%

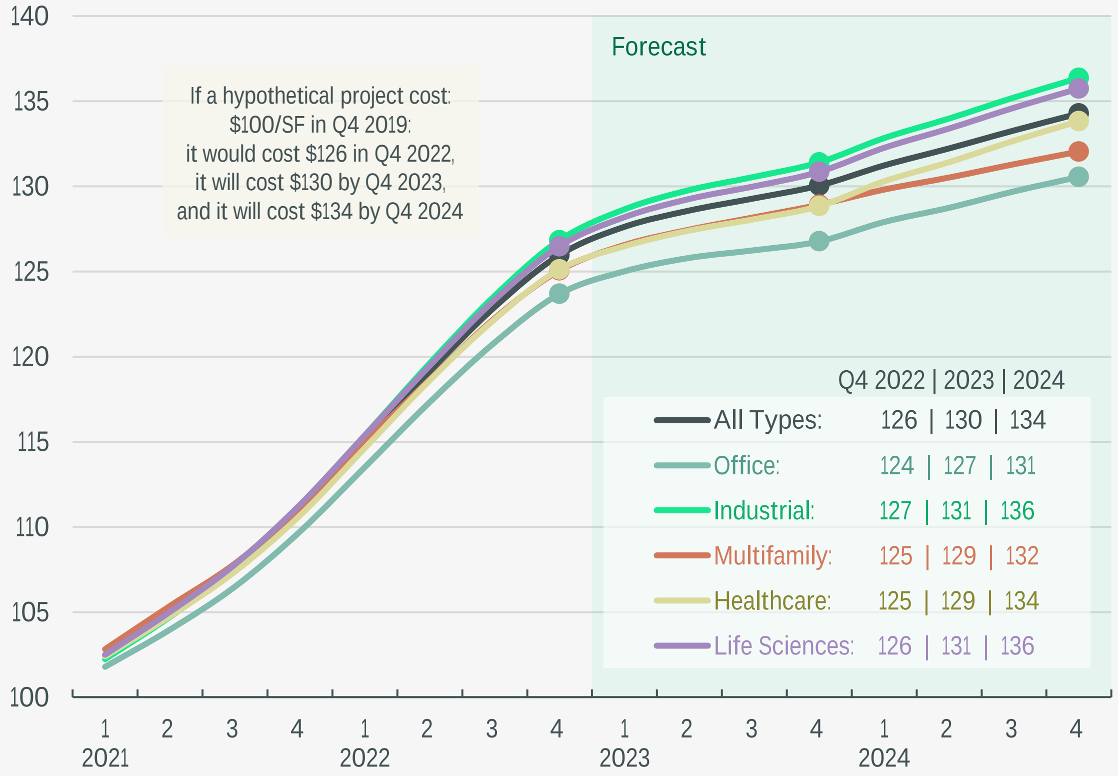
5.6% % of NRA Under Construction
As of Q4 2022
Rank #5, U.S. = 3.5%

Dallas is one of the most active construction markets in the U.S. and the most active for industrial development in this report. Several of the largest projects currently underway broke ground in late 2022/early 2023. Northpoint Development's Intermodal Logistics Center in Haslet is comprised of three modern distribution buildings totaling 2.8 million sq. ft. Building C at TCC's Eagle 35 project is underway in Fort Worth and will add 1.5 million sq. ft. when completed later in the year. It is the largest single building actively under construction in Dallas. Other recent notable industrial groundbreakings include Lovett Industrial's Innovation Ridge Logistics Center, which contains two buildings totaling ±1 million sq. ft. in Forney, and Champion Partners' 1.4-million-sq.-ft. distribution center at Tradepoint 45 West in Wilmer. Though starts are not expected to keep up with buildings set to deliver early in the year, at least a dozen 1-million-sq.-ft.+ buildings are expected to break ground in the first half of 2023, so industrial should continue to be active in Dallas.

Dallas is one of the largest office markets in the U.S., but recently the office market has struggled with higher vacancy and stagnant rents, which has curbed office starts. One exception is KDC's 600,000-sq.-ft. West Love tower which broke ground in early 2023.

Multifamily activity has plateaued in Dallas and began slowing in 2022, and CBRE Econometric Advisors (EA) predicts a record-setting year for multifamily completions in Dallas in 2023, which will likely mean lower active projects once those are completed. However, a surge in building permits issued in 2022 should indicate more development on the way. Multifamily permits increased 27% in 2022, and three 1-million-sq.-ft.+ projects are expected to break ground this year.

TCC/CBRE New Building Cost Index (NBCI) by Property Type (2019 Q4 = 100)



	Q4 2022 | 2023 | 2024
All Types:	126 | 130 | 134
Office:	124 | 127 | 131
Industrial:	127 | 131 | 136
Multifamily:	125 | 129 | 132
Healthcare:	125 | 129 | 134
Life Sciences:	126 | 131 | 136

Source: Bureau of Labor Statistics, Bureau of Economic Analysis, CoStar Group, Oxford Economics, CBRE Strategic Investment Consulting, Q1 2023.

GC expectations for the next 3 months:

- ▲ Lead times for concrete, equipment, HVAC and electrical are expected to lengthen
- ▲ A shortage is expected for concrete, equipment, RTUs and switchgear
- ▼ Materials cost inflation for concrete, openings and equipment will slow from last quarter
- ▶ Materials cost inflation for other categories will be similar to the recent pace of growth
- ▼ Labor costs are expected to flatten after increasing the last several quarters
- ▼ Under Construction Sq. Ft. will slightly slow with fewer starts and an uptick in large deliveries

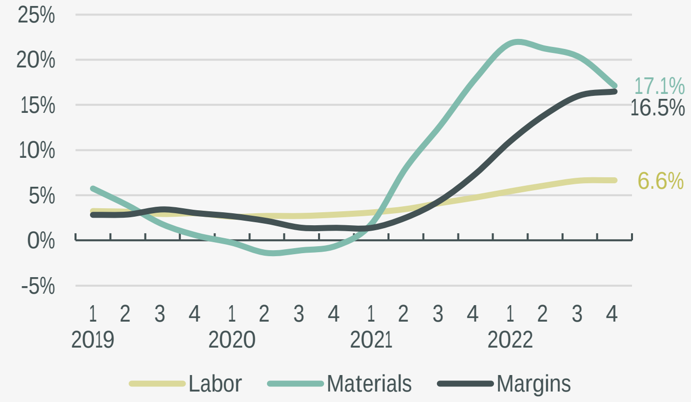
Dallas

CONSTRUCTION COST BREAKDOWN

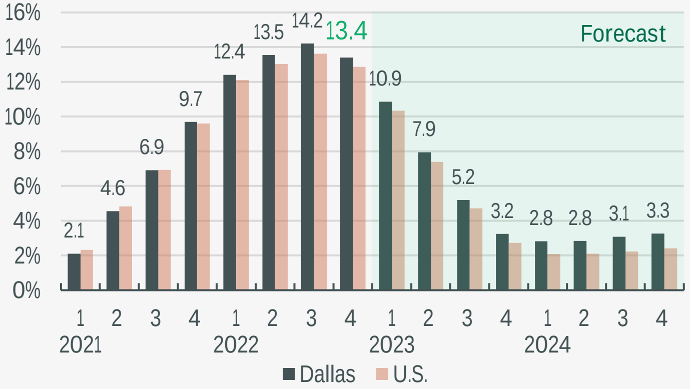
Interpret the charts below:
In Q4 2022, total new building costs increased by 13.4% since Q4 2021.
Labor costs grew by 6.6%, Materials by 17.1%, and Margins by 16.5% over the same period.

Example for using the table below:
If a new office project in Dallas cost $200/SF in Q4 2022,
then it is expected to cost $204.16/SF in Q3 2023, a 2.1% total increase.

Cost Growth (Year-over-Year %) By Cost Component



NBCI Growth (Year-over-Year %) – Market vs. U.S.

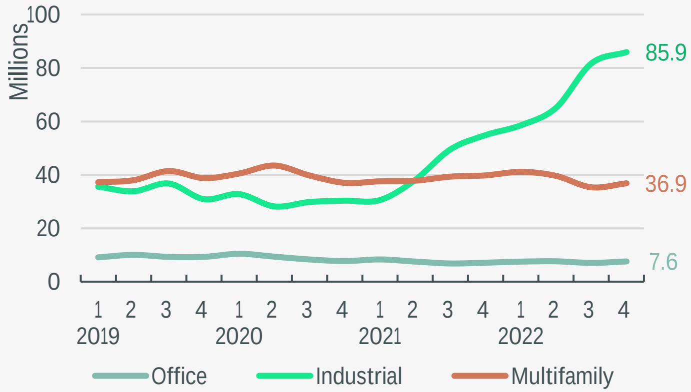


Forecasted NBCI Growth by Property Type – Next 2 Years

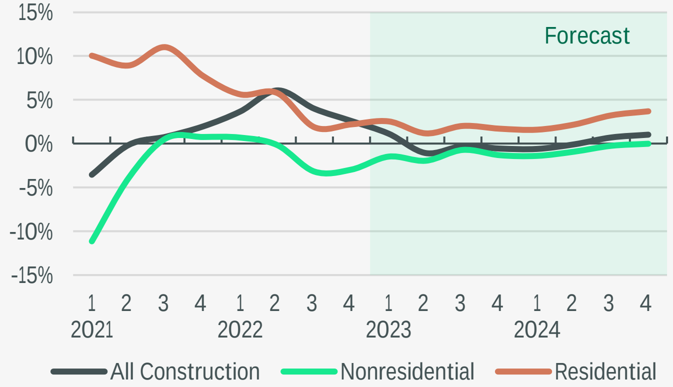
	Cumulative % Change from Q4 2022							
Property Type	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024
Office	1.1%	1.7%	2.1%	2.5%	3.4%	4.1%	4.9%	5.6%
Industrial	1.4%	2.3%	2.9%	3.6%	4.7%	5.6%	6.6%	7.5%
Multifamily	1.2%	1.9%	2.5%	3.1%	3.8%	4.4%	5.0%	5.6%
Healthcare	1.1%	1.8%	2.4%	3.0%	4.1%	5.0%	6.0%	7.0%
Life Sciences	1.3%	2.2%	2.8%	3.5%	4.6%	5.5%	6.4%	7.3%
Total Market	1.3%	2.1%	2.6%	3.2%	4.2%	5.0%	5.8%	6.6%
U.S. Average	1.2%	1.8%	2.3%	2.7%	3.3%	3.9%	4.6%	5.2%

KEY LOCAL MARKET FACTORS

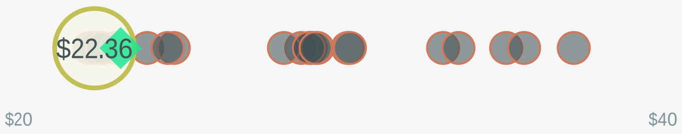
Sq. Ft. Under Construction by Property Type



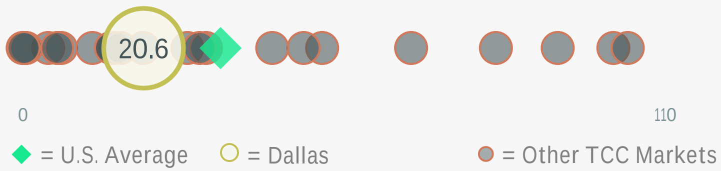
Job Growth (Year-over-Year %) by Subsector



Median Hourly Wage - Construction Occupations



Active Construction Apprenticeships per 1,000 Workers



Note: Life Sciences under construction is included in office or industrial (depending on primary use type)

Sources: Oxford Economics, Costar Group, Bureau of Economic Analysis, Bureau of Labor Statistics, Department of Labor, CBRE Strategic Investment Consulting, Q4 2022

Denver

12.9% Cost Growth – Last 12 Months
% Change in NBCI Q4 2021-Q4 2022
Rank #5, U.S. = 12.9%

2.7% Cost Growth – Next 12 Months
% Change in NBCI Q4 2022-Q4 2023
Rank #19, U.S. = 2.7%

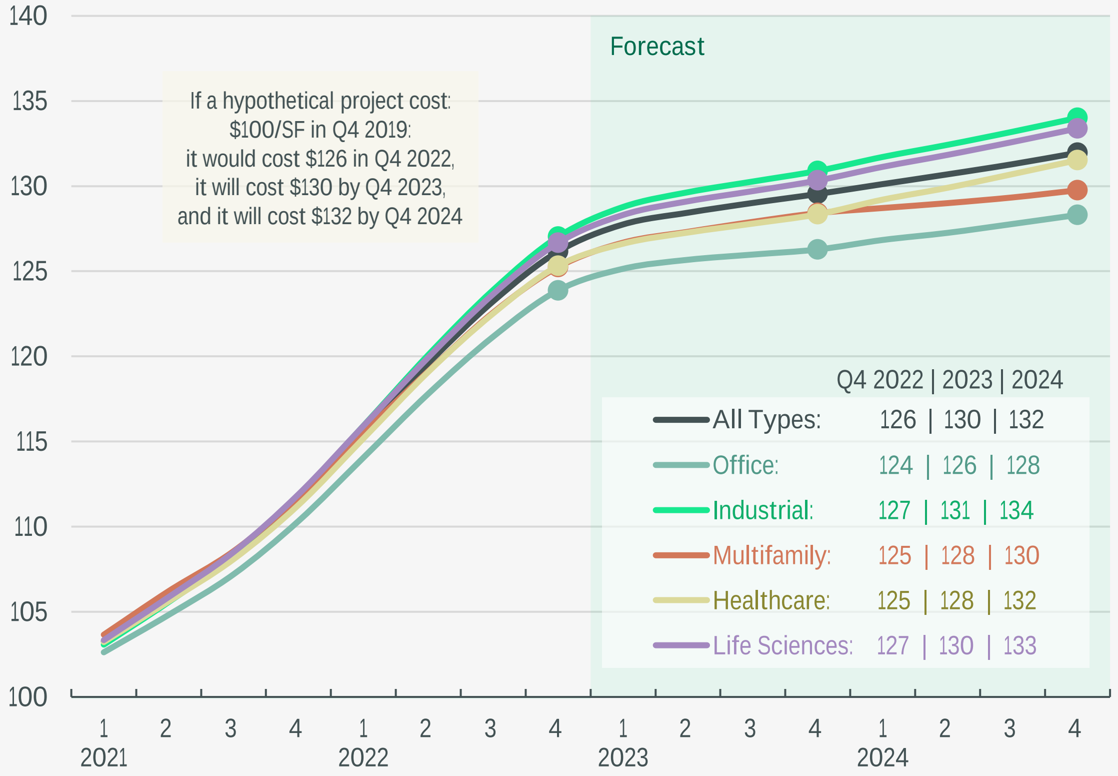
5.1% % of NRA Under Construction
As of Q4 2022
Rank #6, U.S. = 3.5%

Denver has been one of the fastest growing metro economies in recent years, fueled by strong population growth and quality of life. This resulted in a significant rise in multifamily construction in 2022. As of Q4, Denver ranked 4th among all markets in this report in terms of share of multifamily inventory currently under construction. Multifamily starts have been slowing, but prolonged development timelines have kept under construction activity up. Two-thirds of the units in 100-unit+ buildings that are currently under construction are set to deliver in 2023, so construction may fall later in the year unless starts pick up. The two largest active developments are not set to deliver until 2024, so it may take some time for slowing activity to be felt. Additionally, some large projects are nearing starts, including the 750-unit Greyhound development in City Center which is in the final planning stage and set to begin development in mid-2023.

One potential tailwind for multifamily developers could be statewide legislation that would eliminate single-family zoning in urban areas in order to push more multifamily development to meet growing demand. A bill pursuing these measures was introduced to the State Legislature in March of 2023.

Industrial construction has been slowing, but office and other commercial construction has accelerated. One massive mixed-use project is the Downtown Westminster redevelopment which appears slated to begin in 2023. The project spans 105 acres and will include 1 million sq. ft. of office, 1 million sq. ft. of retail and 2,000 residential units, all adjacent to the Denver Regional Transportation District's new station. Several large office projects recently broke ground, including the 600,000-sq.-ft. World Trade Center Denver by Pure Development that started in March 2023. Beacon Capital Partners broke ground on Steel House in February, which will add 323,000 sq. ft. in Platte River.

TCC/CBRE New Building Cost Index (NBCI) by Property Type (2019 Q4 = 100)



Source: Bureau of Labor Statistics, Bureau of Economic Analysis, CoStar Group, Oxford Economics, CBRE Strategic Investment Consulting, Q1 2023.

GC expectations for the next 3 months:

- Lead times for all materials are expected to remain like the last quarter
- A shortage is expected for equipment, HVAC and electrical
- Materials cost inflation for concrete will accelerate from last quarter
- Materials cost inflation for other categories will be slower than the recent pace of growth
- Labor cost growth is expected to slow after more intense growth in recent quarters
- Under Construction Sq. Ft. will pick up with an increase in starts in Q1.

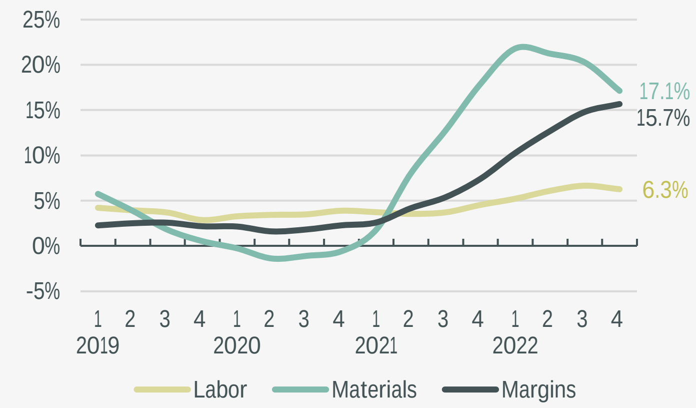
Denver

CONSTRUCTION COST BREAKDOWN

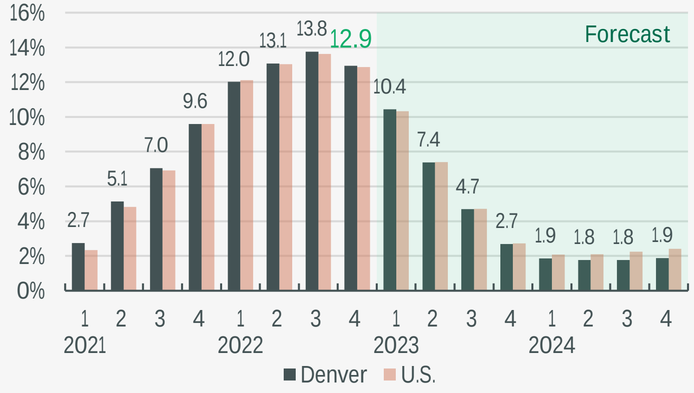
Interpret the charts below:
In Q4 2022, total new building costs increased by 12.9% since Q4 2021.
Labor costs grew by 6.3%, Materials by 17.1%, and Margins by 15.7% over the same period.

Example for using the table below:
If a new office project in Denver cost $200/SF in Q4 2022,
then it is expected to cost $203.39/SF in Q3 2023, a 1.7% total increase.

Cost Growth (Year-over-Year %) By Cost Component



NBCI Growth (Year-over-Year %) – Market vs. U.S.

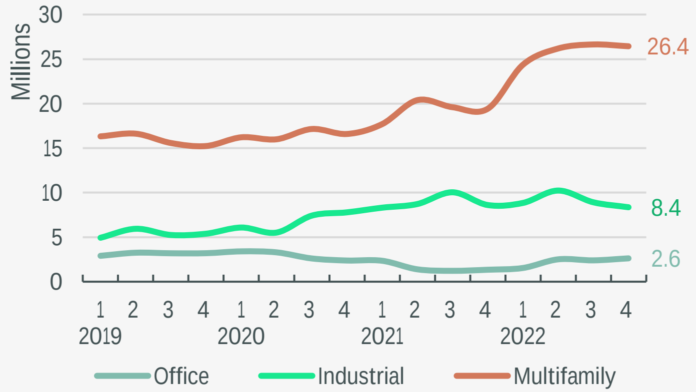


Forecasted NBCI Growth by Property Type – Next 2 Years

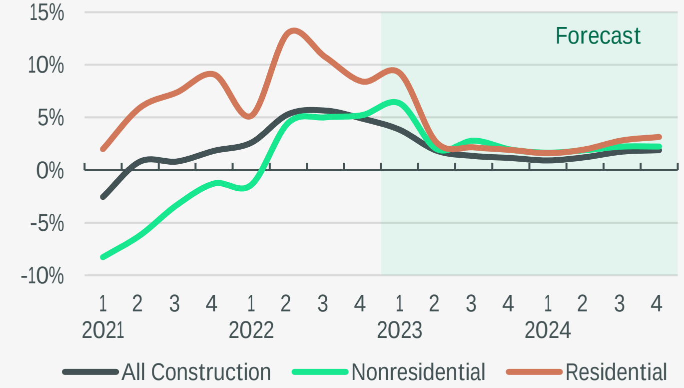
Property Type	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024
	Cumulative % Change from Q4 2022							
Office	1.0%	1.4%	1.7%	1.9%	2.4%	2.7%	3.1%	3.6%
Industrial	1.4%	2.1%	2.6%	3.0%	3.7%	4.2%	4.9%	5.5%
Multifamily	1.1%	1.7%	2.1%	2.5%	2.8%	3.0%	3.3%	3.6%
Healthcare	1.0%	1.6%	2.0%	2.4%	3.1%	3.7%	4.3%	4.9%
Life Sciences	1.3%	1.9%	2.4%	2.9%	3.5%	4.1%	4.7%	5.3%
Total Market	1.3%	1.8%	2.3%	2.7%	3.1%	3.6%	4.1%	4.6%
U.S. Average	1.2%	1.8%	2.3%	2.7%	3.3%	3.9%	4.6%	5.2%

KEY LOCAL MARKET FACTORS

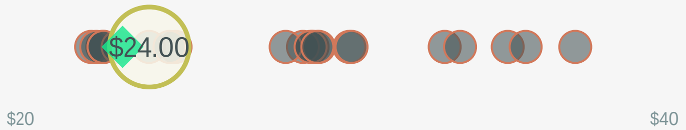
Sq. Ft. Under Construction by Property Type



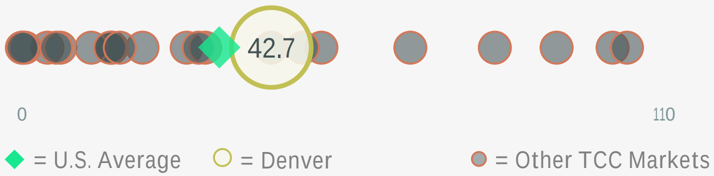
Job Growth (Year-over-Year %) by Subsector



Median Hourly Wage - Construction Occupations



Active Construction Apprenticeships per 1,000 Workers



Note: Life Sciences under construction is included in office or industrial (depending on primary use type)

Sources: Oxford Economics, Costar Group, Bureau of Economic Analysis, Bureau of Labor Statistics, Department of Labor, CBRE Strategic Investment Consulting, Q4 2022

Houston

12.6% Cost Growth – Last 12 Months
% Change in NBCI Q4 2021-Q4 2022
Rank #11, U.S. = 12.9%

3.5% Cost Growth – Next 12 Months
% Change in NBCI Q4 2022-Q4 2023
Rank #6, U.S. = 2.7%

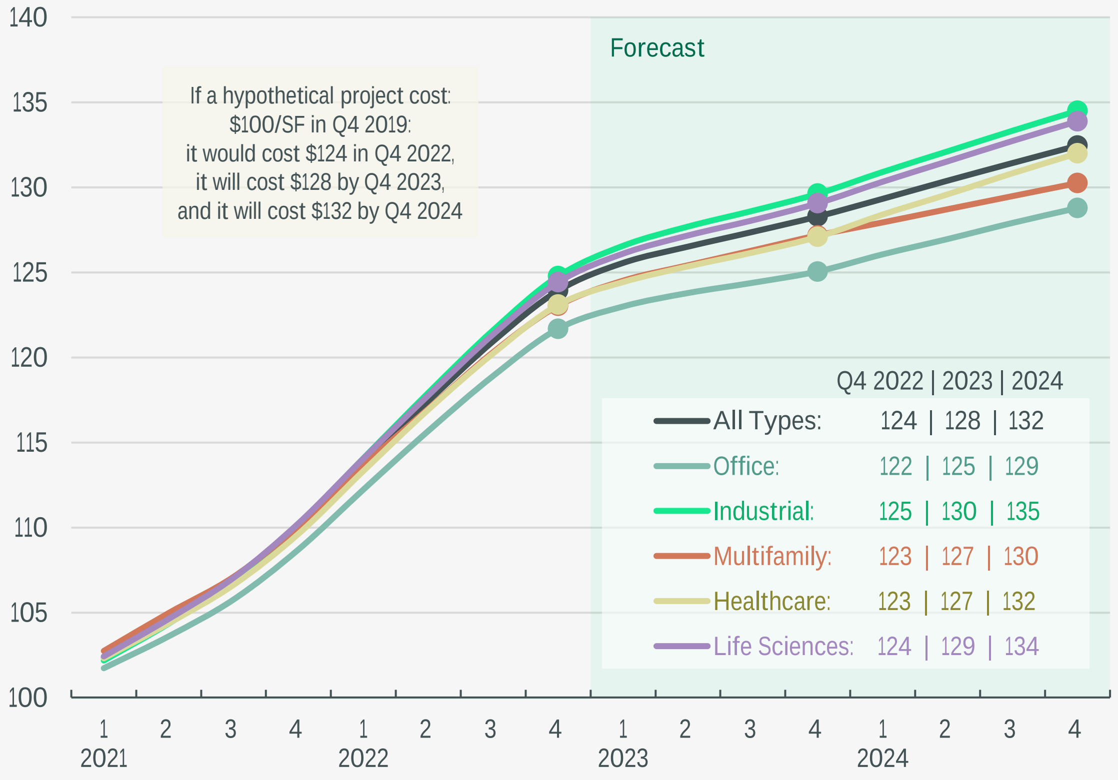
3.7% % of NRA Under Construction
As of Q4 2022
Rank #13, U.S. = 3.5%

Houston has been a rapidly growing logistics market in recent years and industrial development soared in 2022. The market ranks 4th nationally in warehouse inventory, according to CBRE EA, and Houston also had the 4th most industrial sq. ft. deliver in 2022. Three 1-million-sq.-ft.+ projects have broken ground in the last 6 months, with several more expected to start in 2023, so it is likely industrial construction will remain high in the market.

The largest single-building industrial project under construction broke ground in late 2022. Lovett Industrial started phase 1 of their NorthPort Logistics Center, which included a 1.2-million-sq.-ft. distribution facility set to deliver in 2023. TGS's Cedar Port Industrial is the largest park underway and will contain up 4 million sq. ft. across four buildings when completed. Building 1 (1.2 million sq. ft.) delivered fully leased to Home Depot in July 2022, and the remaining inventory is underway and expected to deliver in Q2 2023. IDV is expected to break ground on IDV Kilgore Bay Phase I in the near future, which would be ±700,000 sq. ft. spec but expandable to 1.5 million sq. ft. for a build-to-suit development.

Houston is also a major healthcare market and several large projects are underway. Houston Methodist's Centennial Tower is the largest project underway at ±1,000,000 sq. ft. The 26-story tower in South Main is expected to cost $1.4 billion and is designed to replace the hospital's existing main facility, but likely won't be completed until 2027. Houston Methodist also broke ground on their Cypress Hospital Campus in August 2022, which will add 570,000 sq. ft. and 400 beds to the area in late 2024. No other major facilities are in the pipeline for the near future, but these two projects alone will keep activity elevated in the market.

TCC/CBRE New Building Cost Index (NBCI) by Property Type (2019 Q4 = 100)



Source: Bureau of Labor Statistics, Bureau of Economic Analysis, CoStar Group, Oxford Economics, CBRE Strategic Investment Consulting, Q1 2023.

GC expectations for the next 3 months:

- Lead times for openings, equipment, HVAC, electrical and utility piping/ components are expected to lengthen
- A shortage is expected for concrete, HVAC and electrical
- Materials cost inflation for steel & metals will flatten after dropping last quarter
- Materials cost inflation for other categories will be flat or slower than last quarter
- Labor costs will continue to rise but at a slightly slower pace
- Under Construction Sq. Ft. will remain virtually flat with starts generally keeping pace with deliveries

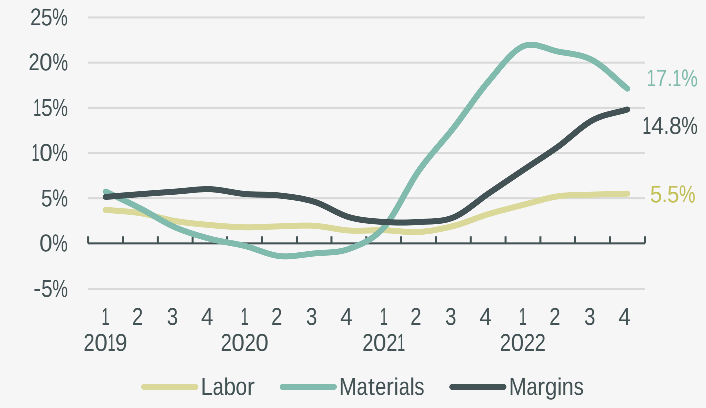
Houston

CONSTRUCTION COST BREAKDOWN

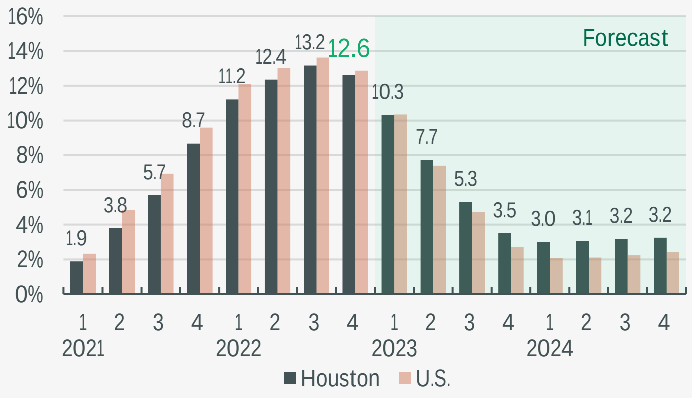
Interpret the charts below:
In Q4 2022, total new building costs increased by 12.6% since Q4 2021.
Labor costs grew by 5.5%, Materials by 17.1%, and Margins by 14.8% over the same period.

Example for using the table below:
If a new office project in Houston cost $200/SF in Q4 2022,
then it is expected to cost $204.45/SF in Q3 2023, a 2.2% total increase.

Cost Growth (Year-over-Year %) By Cost Component



NBCI Growth (Year-over-Year %) – Market vs. U.S.

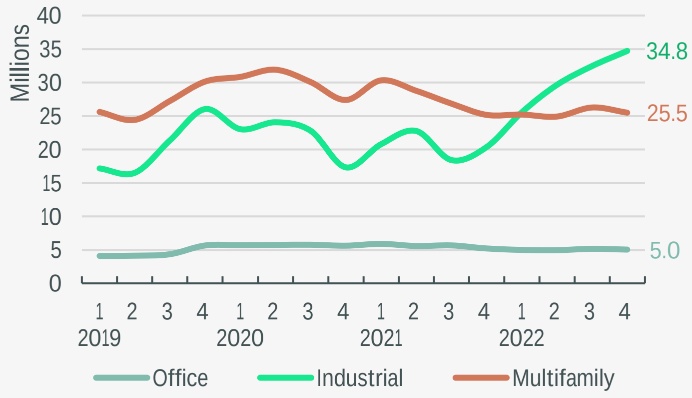


Forecasted NBCI Growth by Property Type – Next 2 Years

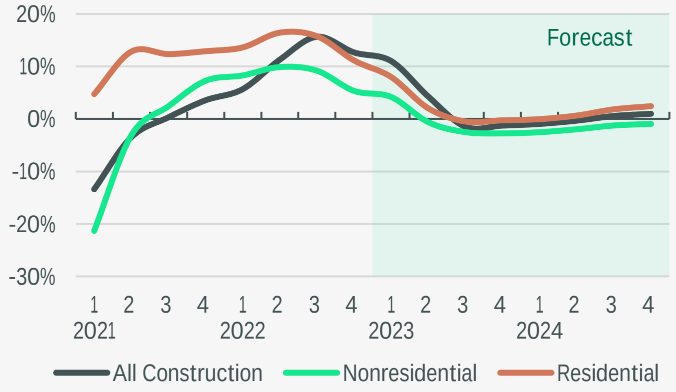
	Cumulative % Change from Q4 2022							
Property Type	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024
Office	1.1%	1.7%	2.2%	2.8%	3.6%	4.3%	5.1%	5.8%
Industrial	1.4%	2.3%	3.1%	3.9%	4.9%	5.9%	6.9%	7.8%
Multifamily	1.2%	1.9%	2.6%	3.4%	4.0%	4.6%	5.2%	5.9%
Healthcare	1.1%	1.8%	2.5%	3.2%	4.3%	5.3%	6.3%	7.2%
Life Sciences	1.3%	2.2%	2.9%	3.7%	4.7%	5.7%	6.7%	7.6%
Total Market	1.3%	2.1%	2.8%	3.5%	4.4%	5.2%	6.1%	6.9%
U.S. Average	1.2%	1.8%	2.3%	2.7%	3.3%	3.9%	4.6%	5.2%

KEY LOCAL MARKET FACTORS

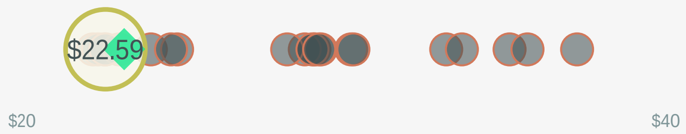
Sq. Ft. Under Construction by Property Type



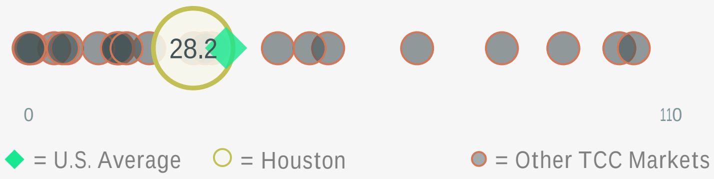
Job Growth (Year-over-Year %) by Subsector



Median Hourly Wage - Construction Occupations



Active Construction Apprenticeships per 1,000 Workers



Note: Life Sciences under construction is included in office or industrial (depending on primary use type)

Sources: Oxford Economics, Costar Group, Bureau of Economic Analysis, Bureau of Labor Statistics, Department of Labor, CBRE Strategic Investment Consulting, Q4 2022

Kansas City

11.7% Cost Growth – Last 12 Months
% Change in NBCI Q4 2021-Q4 2022
Rank #19, U.S. = 12.9%

3.0% Cost Growth – Next 12 Months
% Change in NBCI Q4 2022-Q4 2023
Rank #13, U.S. = 2.7%

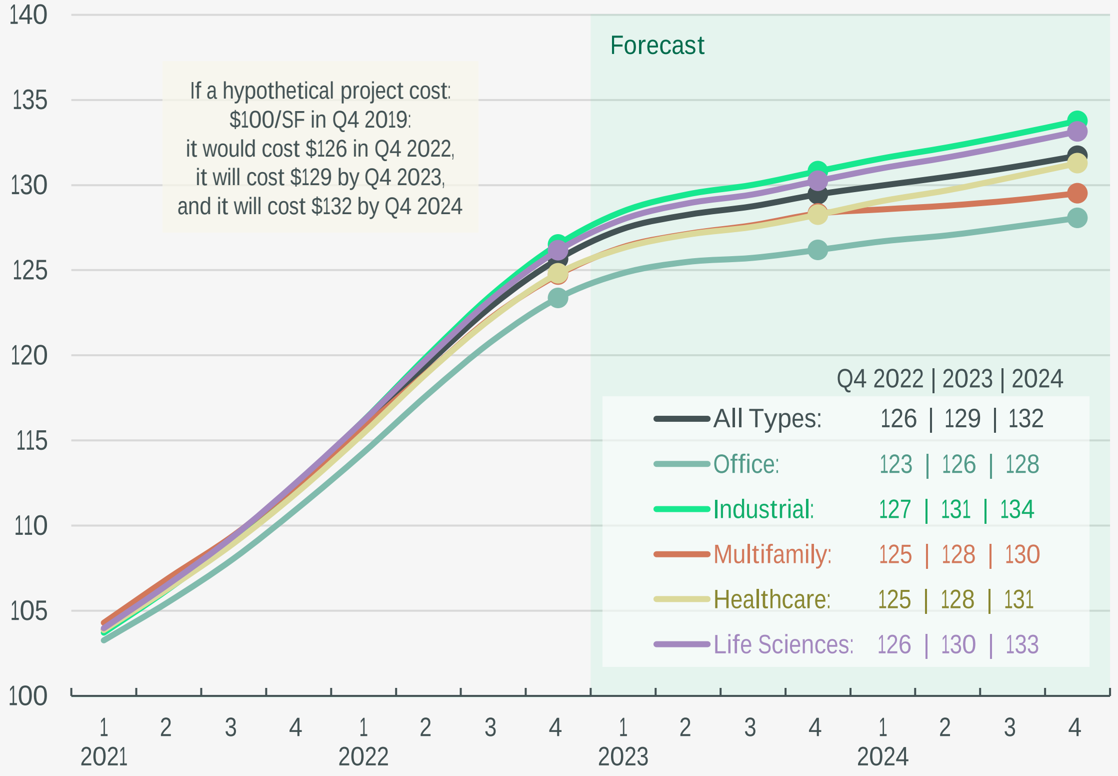
3.4% % of NRA Under Construction
As of Q4 2022
Rank #14, U.S. = 3.5%

Kansas City's central U.S. location has always made it an attractive industrial market, but development really ramped up in the past several years, with nearly 10% of its inventory delivering between 2020-2022. Starts and active projects began slowing in late 2022, but there are still some major projects underway and in the pipeline. VanTrust Real Estate is set to deliver two buildings at New Century Commerce Center in Olathe in May and the project will total nearly 1.1 million sq. ft. The company may also break ground later this year on six other proposed buildings totaling ±5 million sq. ft. in the same park. Most of the other proposed industrial activity will be in the Olathe submarket. NorthPoint Development is in the final planning stages of its 1.2-million-sq.-ft. distribution project at Logistics Park Kansas City and is set to break ground in mid-2023. BentallGreenOak is also likely to begin construction on its 1.2-million-sq.-ft. warehouse project at the I-35 Logistics Park in 2023.

Multifamily development has been consistent the past few years, but the two largest projects are set to deliver this year. Brentwood Apartments, also in Olathe, is expected to complete construction in Q2 2023 and will add 411 units to the market. West Plaza Summit in the West Plaza submarket will add another 394 units. Chapel Ridge Apartments in Lees Summit is set to break ground in Q2 2023 and will add 396 units. Once started, it will be the largest project once the aforementioned projects deliver. Paragon Star, also in Lees Summit, will be nearly the same size at 390 units and is in the final planning stages, so construction should start soon.

Though unrelated to the property types in this report, a major stadium project may impact the overall construction market. The owners of the local women's professional soccer team, the Kansas City Current, broke ground on a $117 million stadium in Downtown Kansas City. The project will be the first stadium built specifically for U.S. women's soccer and is set to open in time for the 2024 season.

TCC/CBRE New Building Cost Index (NBCI) by Property Type (2019 Q4 = 100)



Source: Bureau of Labor Statistics, Bureau of Economic Analysis, CoStar Group, Oxford Economics, CBRE Strategic Investment Consulting, Q1 2023.

GC expectations for the next 3 months:

- ▲ Lead times for concrete, plumbing, HVAC and electrical are expected to lengthen
- ▲ A shortage is expected for the materials above as well as for thermal & moisture protection
- ▼ Materials cost inflation for steel & metals will continue falling
- ▼ Materials cost inflation for concrete, finishes, HVAC and electrical should ease
- ► Labor costs will rise but at virtually the same pace as last quarter
- ▼ Under Construction Sq. Ft. will slow due to a halt in large starts in Q1

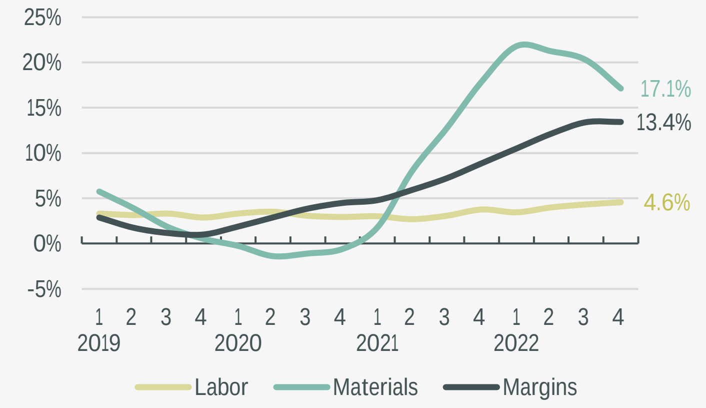
Kansas City

CONSTRUCTION COST BREAKDOWN

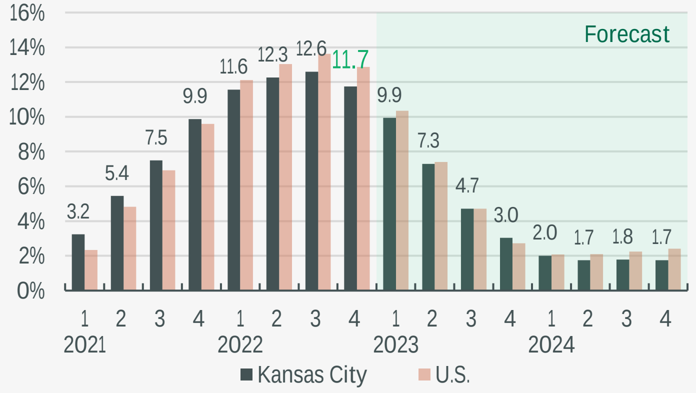
Interpret the charts below:
In Q4 2022, total new building costs increased by 11.7% since Q4 2021.
Labor costs grew by 4.6%, Materials by 17.1%, and Margins by 13.4% over the same period.

Example for using the table below:
If a new office project in Kansas City cost $200/SF in Q4 2022,
then it is expected to cost $203.82/SF in Q3 2023, a 1.9% total increase.

Cost Growth (Year-over-Year %) By Cost Component



NBCI Growth (Year-over-Year %) – Market vs. U.S.

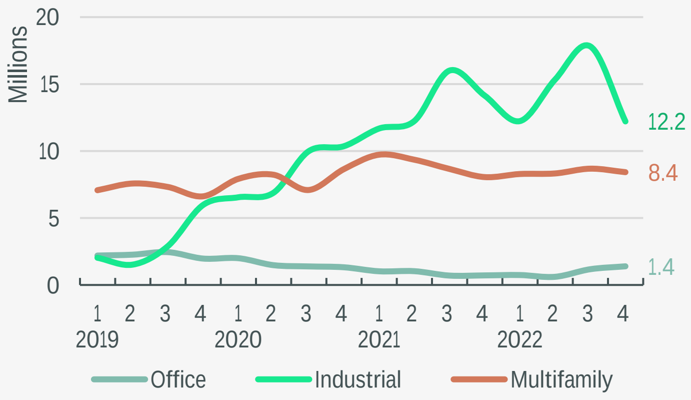


Forecasted NBCI Growth by Property Type – Next 2 Years

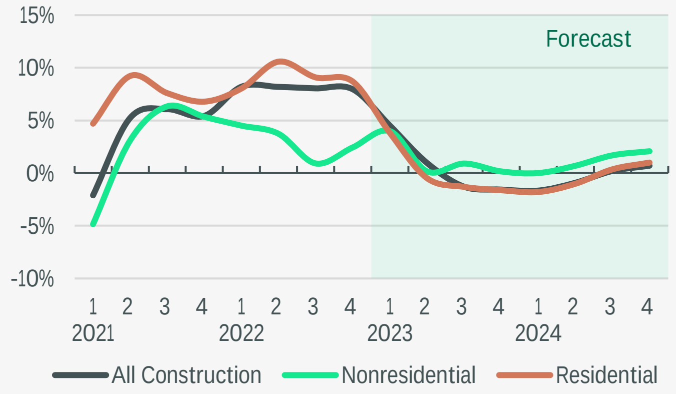
Property Type	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024
	Cumulative % Change from Q4 2022							
Office	1.2%	1.7%	1.9%	2.3%	2.7%	3.0%	3.4%	3.8%
Industrial	1.5%	2.3%	2.8%	3.4%	4.0%	4.5%	5.1%	5.7%
Multifamily	1.3%	1.9%	2.3%	2.9%	3.1%	3.3%	3.5%	3.8%
Healthcare	1.2%	1.8%	2.2%	2.8%	3.4%	3.9%	4.5%	5.2%
Life Sciences	1.5%	2.2%	2.6%	3.2%	3.8%	4.3%	4.9%	5.5%
Total Market	1.4%	2.1%	2.5%	3.0%	3.4%	3.8%	4.3%	4.8%
U.S. Average	1.2%	1.8%	2.3%	2.7%	3.3%	3.9%	4.6%	5.2%

KEY LOCAL MARKET FACTORS

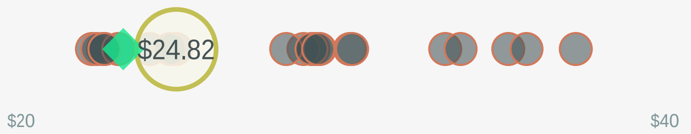
Sq. Ft. Under Construction by Property Type



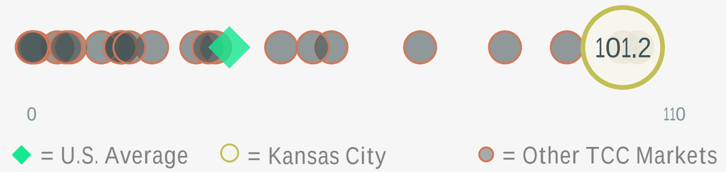
Job Growth (Year-over-Year %) by Subsector



Median Hourly Wage - Construction Occupations



Active Construction Apprenticeships per 1,000 Workers



Note: Life Sciences under construction is included in office or industrial (depending on primary use type)

Sources: Oxford Economics, Costar Group, Bureau of Economic Analysis, Bureau of Labor Statistics, Department of Labor, CBRE Strategic Investment Consulting, Q4 2022

Los Angeles

11.8% Cost Growth – Last 12 Months
% Change in NBCI Q4 2021-Q4 2022
Rank #18, U.S. = 12.9%

3.4% Cost Growth – Next 12 Months
% Change in NBCI Q4 2022-Q4 2023
Rank #8, U.S. = 2.7%

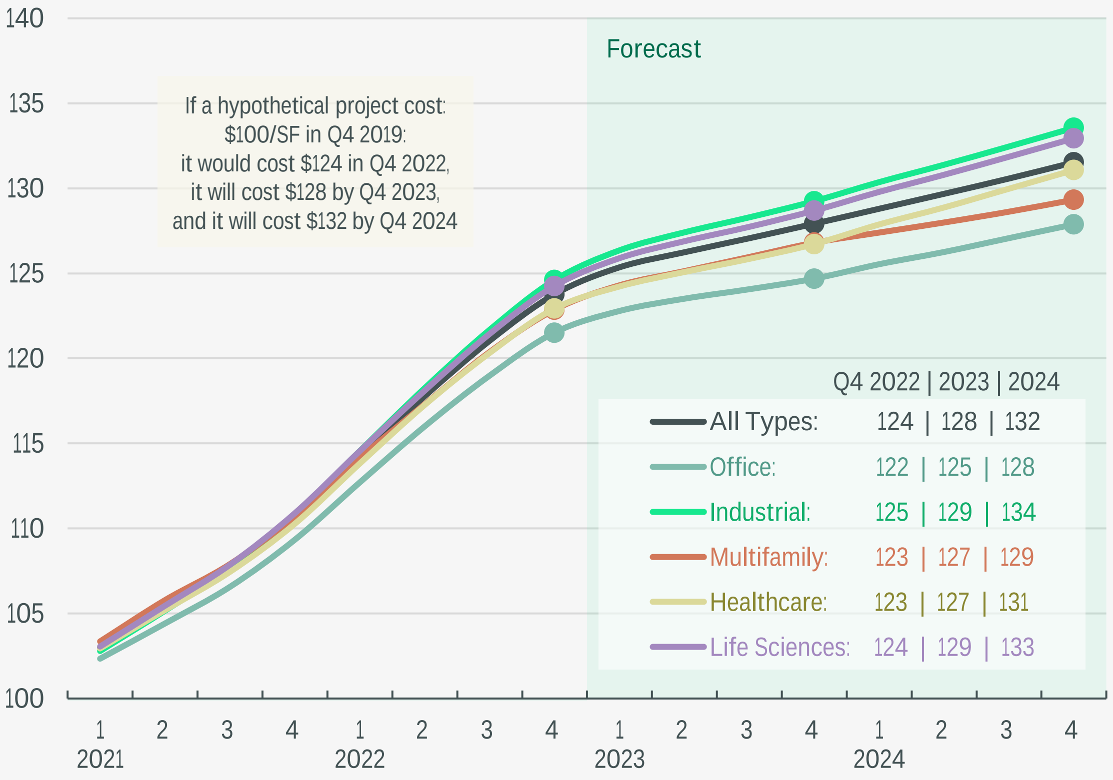
1.6% % of NRA Under Construction
As of Q4 2022
Rank #22, U.S. = 3.5%

Though Los Angeles is one of the five largest markets for any property type, multifamily construction accounts for about 75% of the sq. ft. under construction in the market. Despite the large volume of units under construction, Los Angeles ranks last among markets in this report in multifamily construction when scaled for size (as a share of total existing inventory). When combining all property types in this report, only Newport Beach has a lower share of inventory under construction.

Office activity rose in 2022, due in large part to JMB Realty breaking ground on Century City Center, which will add 731,000 sq. ft. of Class A office pre-leased to CAA. Several large proposed office projects could break ground in 2023, but given the current office market environment and economic outlook, many of these projects are likely to be on hold. One project potentially set to break ground in 2023 is NexCore Properties' HATCHspaces @ Pico and Sepulveda, which is the only office/life science project in the pipeline.

The three largest multifamily projects underway are both set to deliver in 2023. Beaudry is a 785-unit project in the Financial District and is set to finish in Q2 2023. Hines is near completion on their 600-unit project in West Los Angeles called The Residences at West Edge. LaTerra Development is also expected to deliver the 573-unit LaTerra Select Burbank later in 2023. Though there are hundreds of large multifamily projects in the pipeline, only a few are in the final planning stages and likely to break ground within the next quarter. Sandstone Properties is near starting on their 650-unit project in Warner Center, while Blender Enterprises is likely to break ground soon on their 137-unit project in Central San Pedro.

TCC/CBRE New Building Cost Index (NBCI) by Property Type (2019 Q4 = 100)



Source: Bureau of Labor Statistics, Bureau of Economic Analysis, CoStar Group, Oxford Economics, CBRE Strategic Investment Consulting, Q1 2023.

GC expectations for the next 3 months:

- Lead times are expected to stay the same as the past quarter
- A shortage is expected for equipment, HVAC, electrical and wallboards
- Materials cost inflation for concrete, thermal/moisture protection, openings, HVAC and electrical will slow from last quarter
- Materials cost inflation for other categories will be similar to recent growth
- Labor costs are expected to remain flat
- Under Construction Sq. Ft. will remain virtually flat with starts generally keeping pace with deliveries

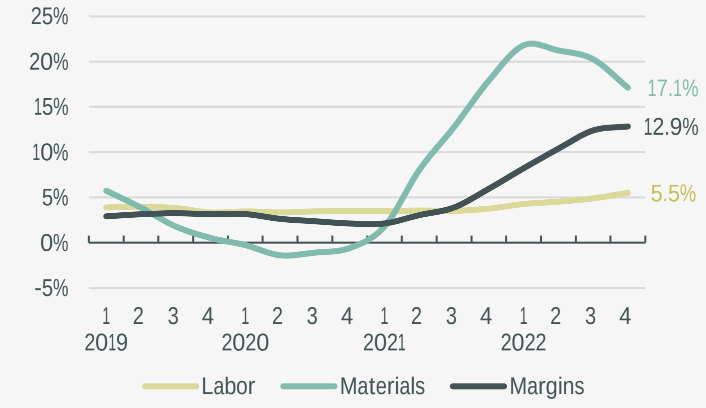
Los Angeles

CONSTRUCTION COST BREAKDOWN

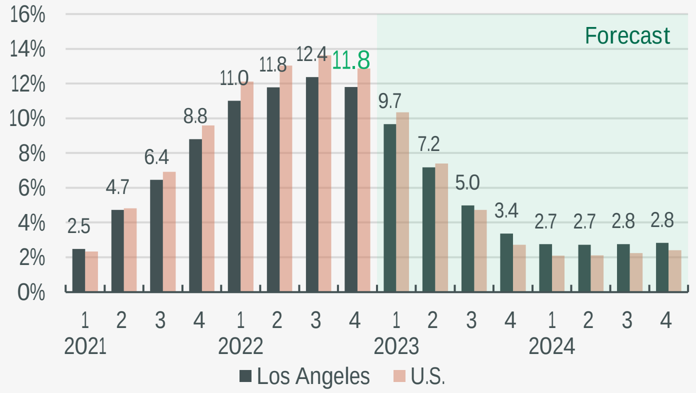
Interpret the charts below:
In Q4 2022, total new building costs increased by 11.8% since Q4 2021.
Labor costs grew by 5.5%, Materials by 17.1%, and Margins by 12.9% over the same period.

Example for using the table below:
If a new office project in Los Angeles cost $200/SF in Q4 2022,
then it is expected to cost $204.20/SF in Q3 2023, a 2.1% total increase.

Cost Growth (Year-over-Year %) By Cost Component



NBCI Growth (Year-over-Year %) – Market vs. U.S.

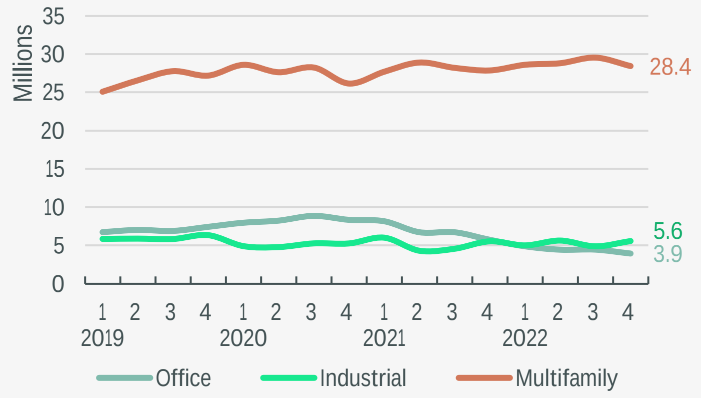


Forecasted NBCI Growth by Property Type – Next 2 Years

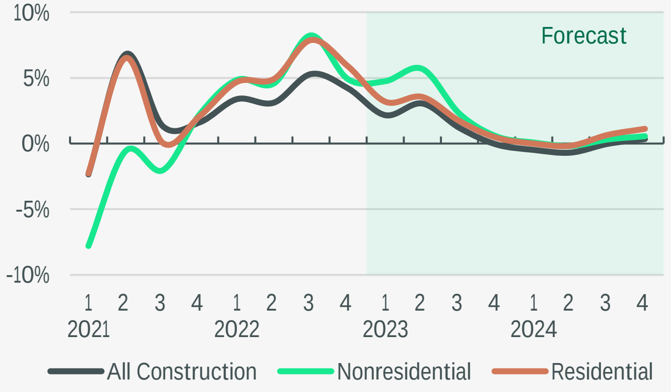
	Cumulative % Change from Q4 2022							
Property Type	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024
Office	1.0%	1.6%	2.1%	2.6%	3.3%	3.9%	4.6%	5.2%
Industrial	1.4%	2.3%	3.0%	3.7%	4.6%	5.4%	6.3%	7.2%
Multifamily	1.2%	1.8%	2.5%	3.2%	3.7%	4.2%	4.7%	5.3%
Healthcare	1.1%	1.7%	2.4%	3.1%	4.0%	4.8%	5.7%	6.6%
Life Sciences	1.3%	2.1%	2.8%	3.6%	4.5%	5.3%	6.1%	7.0%
Total Market	1.3%	2.0%	2.7%	3.4%	4.1%	4.8%	5.5%	6.3%
U.S. Average	1.2%	1.8%	2.3%	2.7%	3.3%	3.9%	4.6%	5.2%

KEY LOCAL MARKET FACTORS

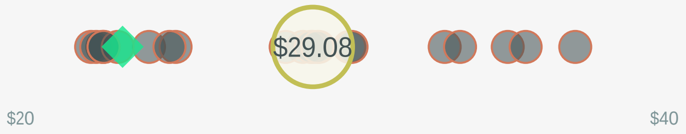
Sq. Ft. Under Construction by Property Type



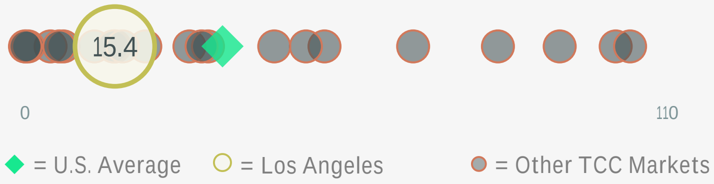
Job Growth (Year-over-Year %) by Subsector



Median Hourly Wage - Construction Occupations



Active Construction Apprenticeships per 1,000 Workers



Note: Life Sciences under construction is included in office or industrial (depending on primary use type)

Sources: Oxford Economics, Costar Group, Bureau of Economic Analysis, Bureau of Labor Statistics, Department of Labor, CBRE Strategic Investment Consulting, Q4 2022

Madison

11.7% Cost Growth – Last 12 Months
% Change in NBCI Q4 2021-Q4 2022
Rank #20, U.S. = 12.9%

2.6% Cost Growth – Next 12 Months
% Change in NBCI Q4 2022-Q4 2023
Rank #20, U.S. = 2.7%

2.3% % of NRA Under Construction
As of Q4 2022
Rank #20, U.S. = 3.5%

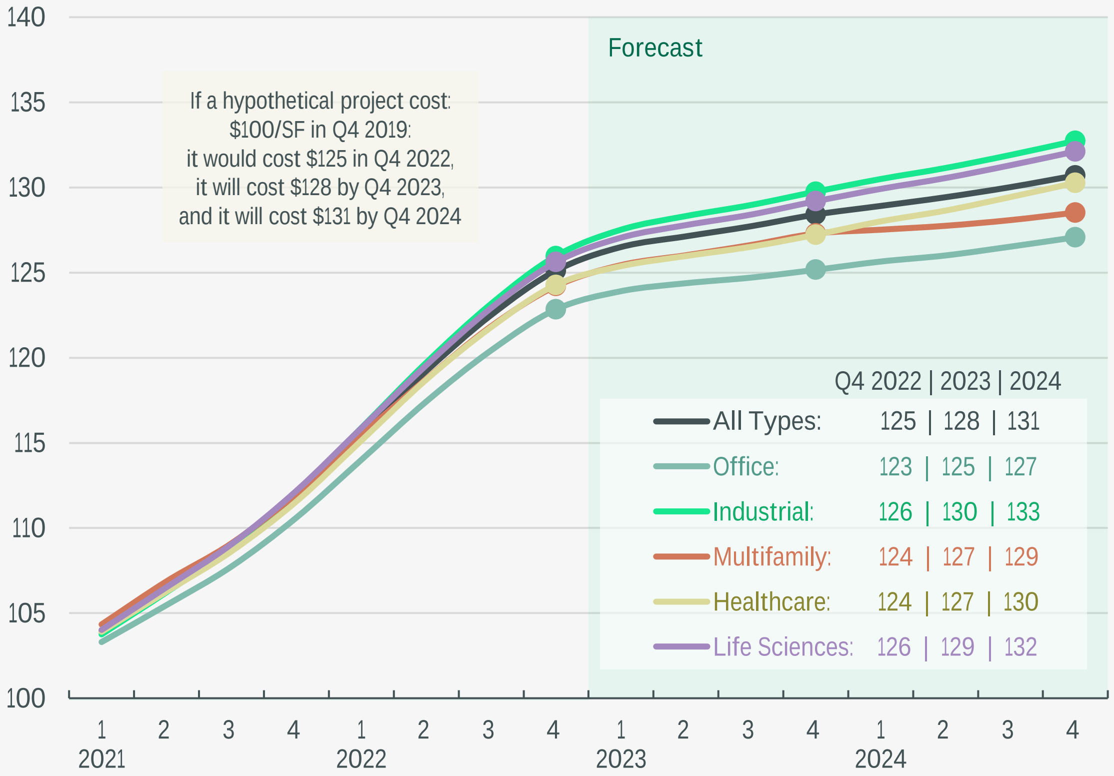
Madison is the smallest market in this report and primarily driven by state government and the University of Wisconsin-Madison. These two drivers make it an attractive multifamily market, including student housing developments. Madison saw a major spike in multifamily activity in late 2020 through 2021 which caused costs to increase more rapidly during those periods, but demand has since stabilized and NBCI growth has fallen below the U.S. average.

Though construction has slowed, apartment demand is still sky-high in the market. Some developers had noted materials pricing has put many small or medium-sized projects on hold, but the larger projects still make financial sense. According to Q4 2022 data from CBRE EA and Real Page, Madison has the lowest vacancy rate (1.4%) of the 69 markets tracked.

The largest apartment project underway is Oliv Madison in Downtown, which is a 386-unit complex set to deliver in 2024. At 364 units, the second largest development was Covered Bridge Residences in Windsor, but that building delivered in March 2023. A few large student housing projects broke ground in late 2022 and early 2023, all in Downtown Madison. The largest was Chapter at Madison by CRG Residential (165 units), followed by Verve Madison by Broadview Real Estate Partners (142 units). All are expected to deliver in 2024.

Though a smaller market, population growth has driven high demand for distribution and warehouse space in the market. There are only four industrial projects over 100,000 sq. ft. underway in the market, and all but one are expected to deliver in 2023. TCC has a 3.6-million-sq.-ft. distribution facility in Sun Prairie planned, but the construction timeline is still uncertain. It would be the largest facility in the region by a significant margin.

TCC/CBRE New Building Cost Index (NBCI) by Property Type (2019 Q4 = 100)



Source: Bureau of Labor Statistics, Bureau of Economic Analysis, CoStar Group, Oxford Economics, CBRE Strategic Investment Consulting, Q1 2023.

GC expectations for the next 3 months:

- ▲ Lead times for concrete and electrical are expected to lengthen
- ▼ Lead times for steel/metals and thermal/moisture protection are expected to shorten
- ▼ Materials cost inflation for concrete, steel, HVAC and electrical will slow from last quarter
- ▲ Materials cost inflation for finishes and equipment will accelerate
- ► Labor costs will rise but at virtually the same pace as last quarter
- ▼ Under Construction Sq. Ft. will slightly slow with fewer starts and an uptick in deliveries

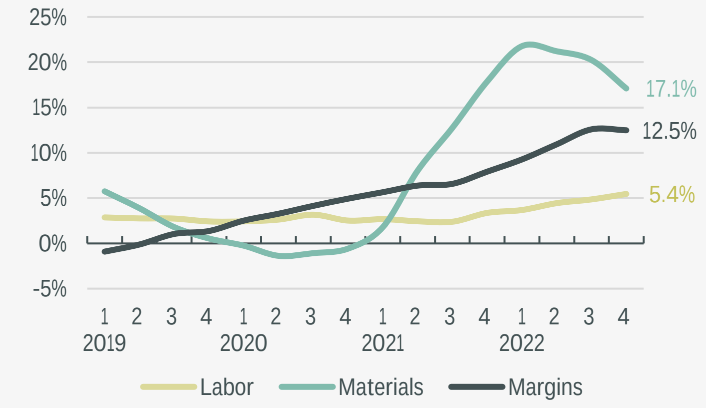
Madison

CONSTRUCTION COST BREAKDOWN

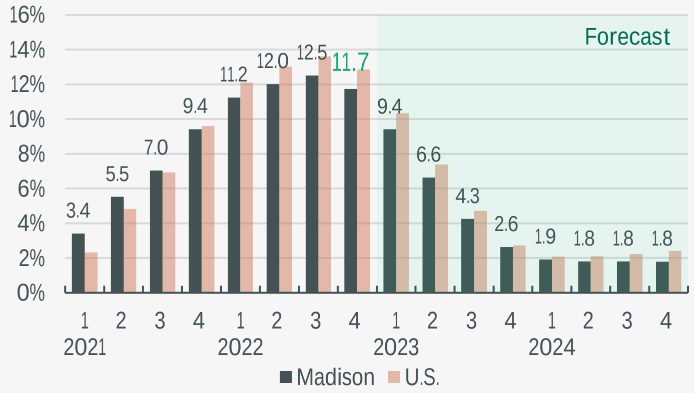
Interpret the charts below:
In Q4 2022, total new building costs increased by 11.7% since Q4 2021.
Labor costs grew by 5.4%, Materials by 17.1%, and Margins by 12.5% over the same period.

Example for using the table below:
If a new office project in Madison cost $200/SF in Q4 2022,
then it is expected to cost $203.04/SF in Q3 2023, a 1.5% total increase.

Cost Growth (Year-over-Year %) By Cost Component



NBCI Growth (Year-over-Year %) – Market vs. U.S.

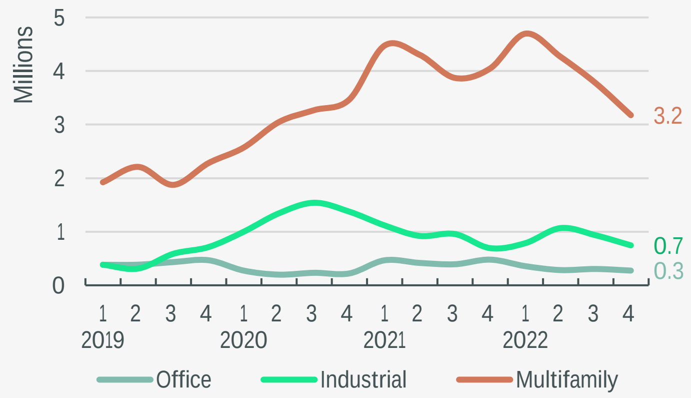


Forecasted NBCI Growth by Property Type – Next 2 Years

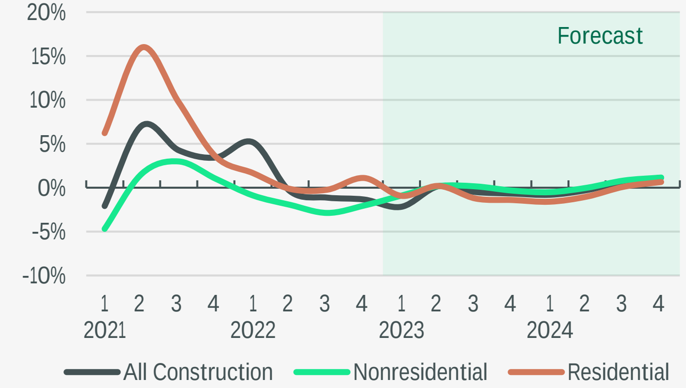
	Cumulative % Change from Q4 2022							
Property Type	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024
Office	0.9%	1.3%	1.5%	1.9%	2.3%	2.6%	3.0%	3.4%
Industrial	1.2%	1.9%	2.4%	3.0%	3.6%	4.1%	4.7%	5.4%
Multifamily	1.0%	1.5%	1.9%	2.5%	2.7%	2.9%	3.1%	3.5%
Healthcare	0.9%	1.4%	1.8%	2.4%	3.0%	3.5%	4.1%	4.8%
Life Sciences	1.1%	1.7%	2.2%	2.8%	3.4%	3.9%	4.5%	5.2%
Total Market	1.1%	1.6%	2.1%	2.6%	3.0%	3.4%	3.9%	4.5%
U.S. Average	1.2%	1.8%	2.3%	2.7%	3.3%	3.9%	4.6%	5.2%

KEY LOCAL MARKET FACTORS

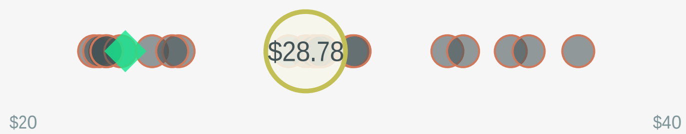
Sq. Ft. Under Construction by Property Type



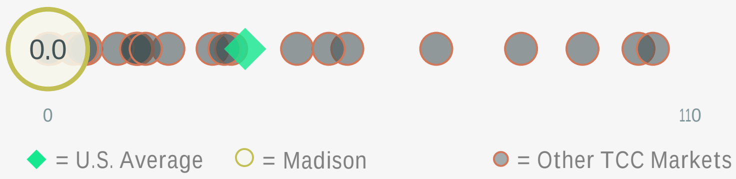
Job Growth (Year-over-Year %) by Subsector



Median Hourly Wage - Construction Occupations



Active Construction Apprenticeships per 1,000 Workers



Note: Life Sciences under construction is included in office or industrial (depending on primary use type)

Sources: Oxford Economics, Costar Group, Bureau of Economic Analysis, Bureau of Labor Statistics, Department of Labor, CBRE Strategic Investment Consulting, Q4 2022

Minneapolis

12.2% Cost Growth – Last 12 Months
% Change in NBCI Q4 2021-Q4 2022
Rank #16, U.S. = 12.9%

3.6% Cost Growth – Next 12 Months
% Change in NBCI Q4 2022-Q4 2023
Rank #5, U.S. = 2.7%

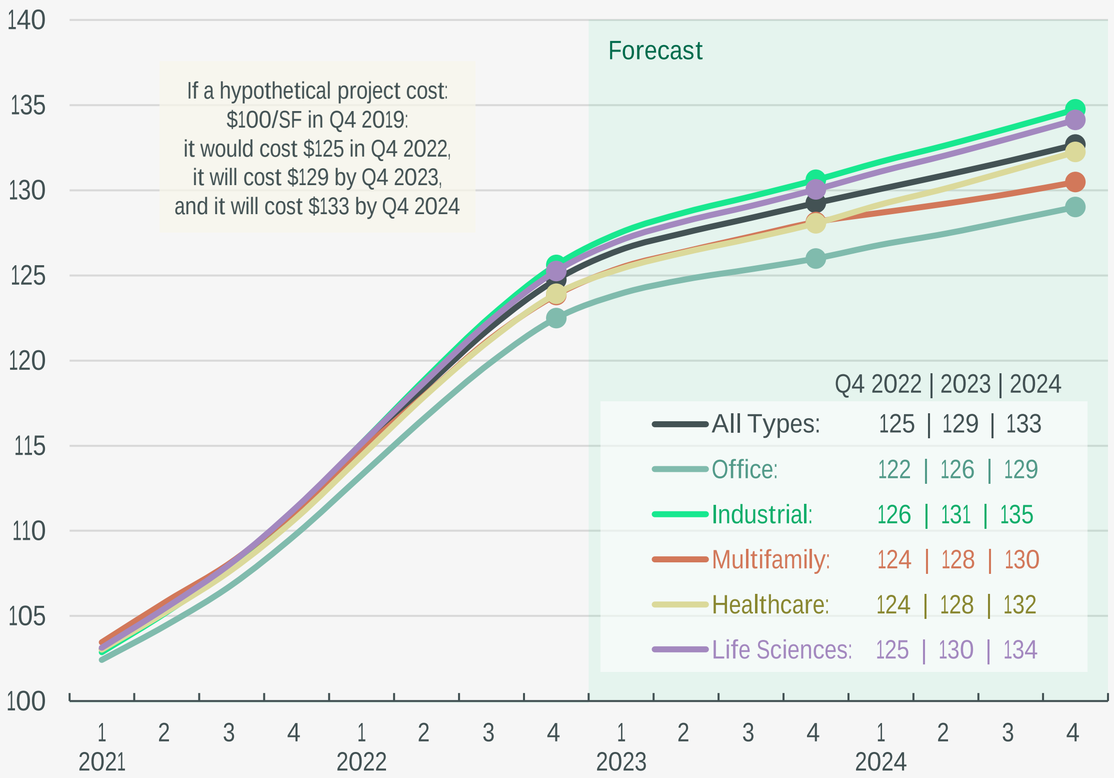
2.9% % of NRA Under Construction
As of Q4 2022
Rank #16, U.S. = 3.5%

NBCI growth has been much slower in Minneapolis due to lighter construction activity and lower wage growth than most of the other markets in this report. The NBCI is expected to be a bit higher than most other markets in the next year, largely because the base will be lower (due to slower recent growth) and because wage growth will likely start to catch up with other markets. The NBCI trend aligns with local contractor expectations, who noted they expect costs to remain higher over the next year.

Multifamily has been the most stable source of construction activity and has steadily climbed in the market. The largest active project is North Loop Green by Hines, which will add 450 units in early 2024. North Loop Green is also the only notable office project underway. Hines will add 360,000 sq. ft. as part of the development in early 2024. Office development has been virtually non-existent as the office market has struggled in Minneapolis, especially in the CBD. The Minnesota Vikings are likely to break ground on a 1,000,000-sq.-ft. office at their facility at Viking Lakes in Eagan in 2023.

A surge in industrial activity occurred in 2022 but peaked about mid-year, though it remains well-above historic norms. About 75% of the projects are speculative developments, indicating continued developer confidence that tenant demand is still robust. Two large projects broke ground in Q4 2022, including 450,000 sq. ft. of speculative space at the River Valley Business Park A/B sites in Shakopee and the 121,000-sq.-ft. Amazon build-to-suit development in Centerville. More than 8 million sq. ft. delivered in 2022, but did little to impact the tightness in the market. Minneapolis industrial is at a 3% vacancy rate, so there is still plenty of room for more construction unless demand suddenly drops unexpectedly.

TCC/CBRE New Building Cost Index (NBCI) by Property Type (2019 Q4 = 100)



Source: Bureau of Labor Statistics, Bureau of Economic Analysis, CoStar Group, Oxford Economics, CBRE Strategic Investment Consulting, Q1 2023.

GC expectations for the next 3 months:

- ▲ Lead times for concrete and electrical switchgear are expected to lengthen
- ▼ Lead times for steel/metal, openings, equipment and thermal/moisture protection are expected to shorten
- ▲ A shortage is expected for electrical switchgear
- ▲ Materials cost inflation for electrical will accelerate
- ▶ Materials cost inflation for other categories will be similar to growth
- ▼ Labor costs will rise but at a slightly slower pace than last quarter
- ▼ Under Construction Sq. Ft. will slightly slow with fewer starts and an uptick in deliveries

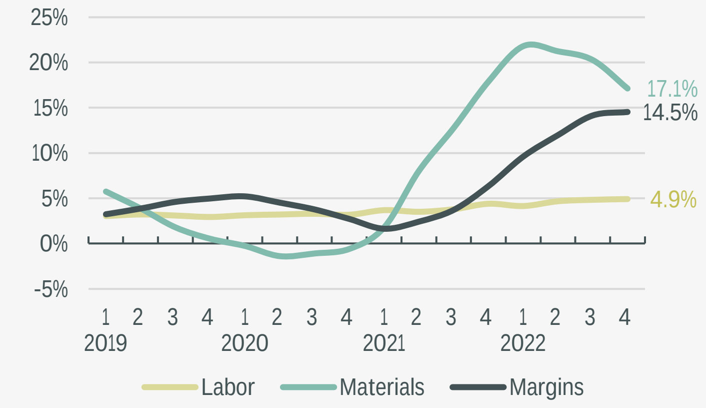
Minneapolis

CONSTRUCTION COST BREAKDOWN

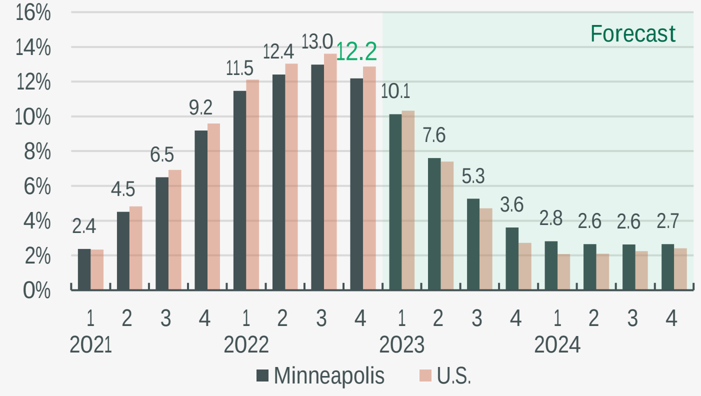
Interpret the charts below:
In Q4 2022, total new building costs increased by 12.2% since Q4 2021.
Labor costs grew by 4.9%, Materials by 17.1%, and Margins by 14.5% over the same period.

Example for using the table below:
If a new office project in Minneapolis cost $200/SF in Q4 2022, then it is expected to cost $204.69/SF in Q3 2023, a 2.3% total increase.

Cost Growth (Year-over-Year %) By Cost Component



NBCI Growth (Year-over-Year %) – Market vs. U.S.

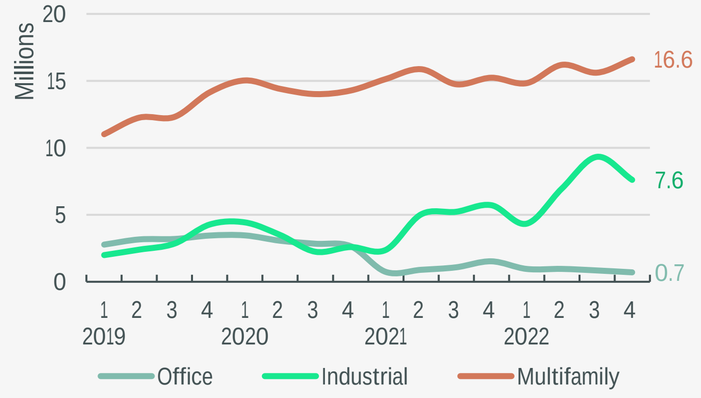


Forecasted NBCI Growth by Property Type – Next 2 Years

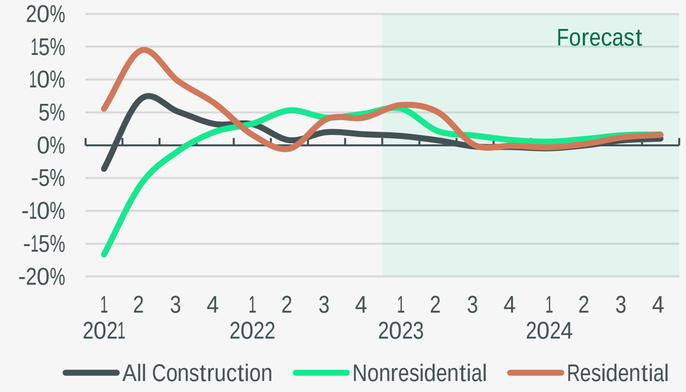
	Cumulative % Change from Q4 2022							
Property Type	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024
Office	1.2%	1.9%	2.3%	2.9%	3.5%	4.1%	4.7%	5.3%
Industrial	1.5%	2.5%	3.2%	4.0%	4.8%	5.6%	6.4%	7.3%
Multifamily	1.3%	2.1%	2.8%	3.5%	3.9%	4.3%	4.8%	5.3%
Healthcare	1.2%	2.0%	2.6%	3.3%	4.2%	5.0%	5.8%	6.7%
Life Sciences	1.5%	2.3%	3.1%	3.8%	4.7%	5.4%	6.2%	7.1%
Total Market	1.4%	2.2%	2.9%	3.6%	4.3%	4.9%	5.6%	6.4%
U.S. Average	1.2%	1.8%	2.3%	2.7%	3.3%	3.9%	4.6%	5.2%

KEY LOCAL MARKET FACTORS

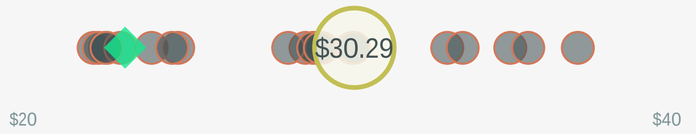
Sq. Ft. Under Construction by Property Type



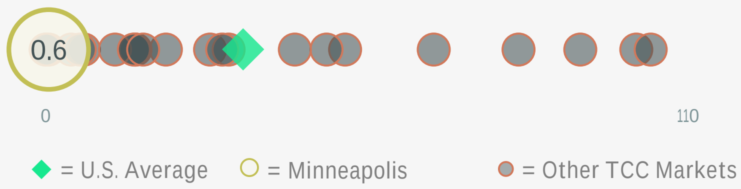
Job Growth (Year-over-Year %) by Subsector



Median Hourly Wage - Construction Occupations



Active Construction Apprenticeships per 1,000 Workers



Note: Life Sciences under construction is included in office or industrial (depending on primary use type)

Sources: Oxford Economics, Costar Group, Bureau of Economic Analysis, Bureau of Labor Statistics, Department of Labor, CBRE Strategic Investment Consulting, Q4 2022

New Jersey

12.9% Cost Growth – Last 12 Months
% Change in NBCI Q4 2021-Q4 2022
Rank #6, U.S. = 12.9%

2.2% Cost Growth – Next 12 Months
% Change in NBCI Q4 2022-Q4 2023
Rank #22, U.S. = 2.7%

3.8% % of NRA Under Construction
As of Q4 2022
Rank #12, U.S. = 3.5%

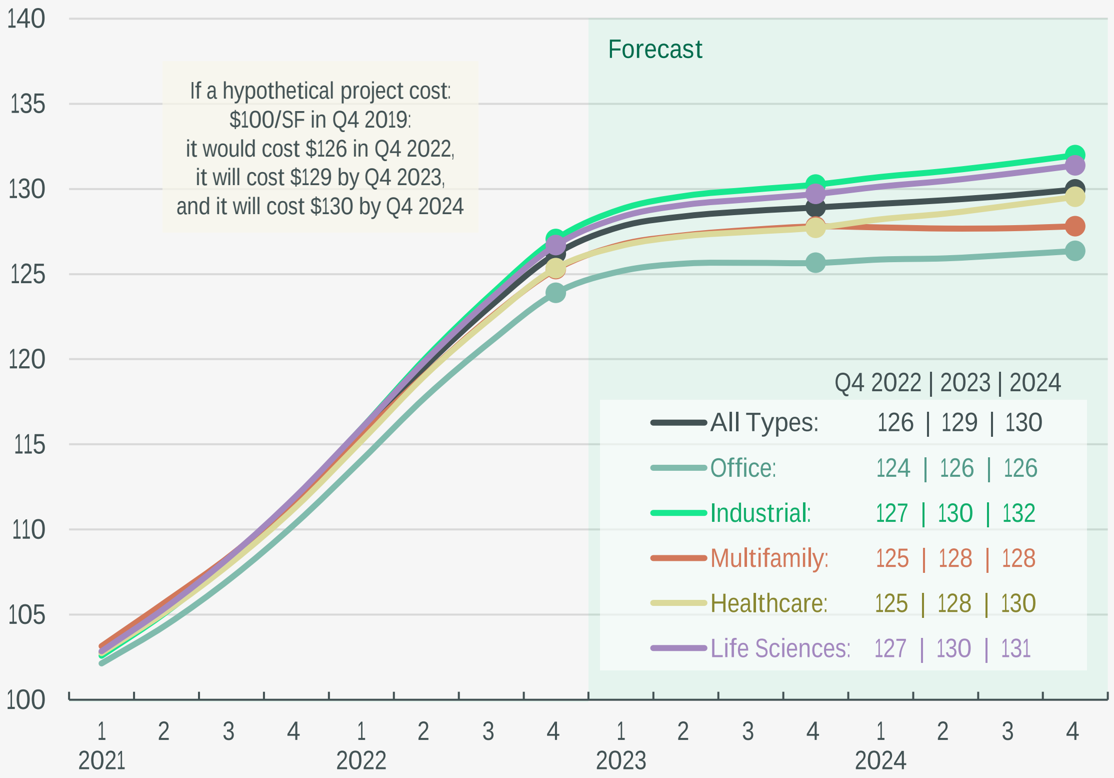
Construction costs soared in 2022 in New Jersey, due mostly to the surge in industrial and multifamily development activity. Though the amount of sq. ft. (relative to the size of the market) is not especially high compared to other markets in this report, it is historically high for New Jersey, which did not see much development in the last cycle. As of Q4 2022, the share of NRA under construction in New Jersey was more than triple the average from 2010-2019. This put significant demand pressure on local contractors which pushed year-over-year growth in margins to nearly 18%. Cost growth is expected to slow, in large part because they have escalated so much in the past 12 months. Builder demand should stabilize and cool in 2023, easing margin growth, but labor has yet to increase much so there may be some rising labor costs later in the year.

In Northern New Jersey, construction may begin this year on a mixed-use mega-project at the former Newark Bears stadium site in Downtown Newark. Plans for the site call for commercial/office space, hospitality, parking and 4,200 residential units across 11 buildings. Accurate Builders and Developers expects nine phases of the project.

Industrial construction slowed as 2022 progressed and several of the largest projects are expected to deliver soon. Most notably, Greek Development is set to deliver four buildings totaling ±1.7 million sq. ft. at Linden Logistics Center in Q2 2023. A few mid-sized (250K-500K SF) facilities are in the planning process and could break ground soon, but industrial activity will likely slow as more projects deliver than start.

There are not any major lab/life sciences facilities underway in the market, but a handful of major projects are proposed and have potential to break ground this year. The largest is a 400,000-sq.-ft. build-to-suit facility in Trenton for BeiGene, which would be developed by DPR Construction.

TCC/CBRE New Building Cost Index (NBCI) by Property Type (2019 Q4 = 100)



Source: Bureau of Labor Statistics, Bureau of Economic Analysis, CoStar Group, Oxford Economics, CBRE Strategic Investment Consulting, Q1 2023.

GC expectations for the next 3 months:

- Lead times for equipment, HVAC and electrical are expected to lengthen
- A shortage is expected for concrete, equipment HVAC and electrical
- Steel & metals costs will drop after rising last quarter
- Materials cost inflation for concrete, masonry, HVAC and electrical will accelerate
- Labor costs will rise but at virtually the same pace as last quarter
- Under Construction Sq. Ft. will slightly slow for office and industrial but an increase in multifamily starts may sustain activity

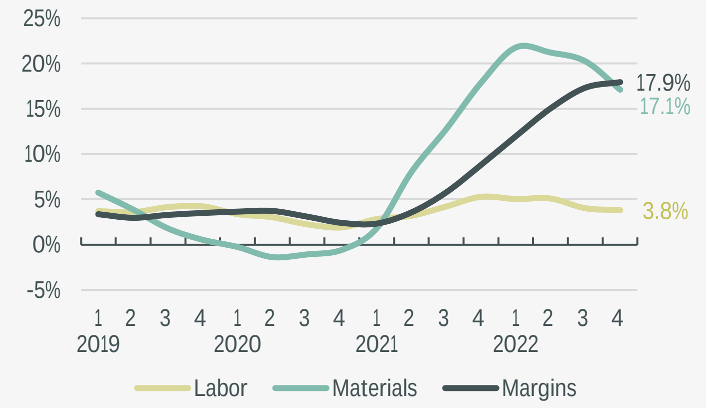
New Jersey

CONSTRUCTION COST BREAKDOWN

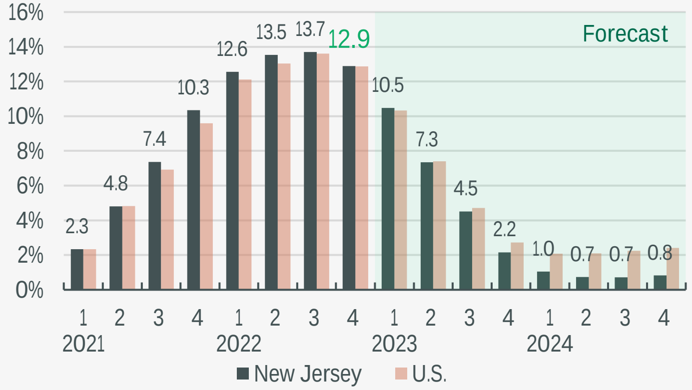
Interpret the charts below:
In Q4 2022, total new building costs increased by 12.9% since Q4 2021.
Labor costs grew by 3.8%, Materials by 17.1%, and Margins by 17.9% over the same period.

Example for using the table below:
If a new office project in New Jersey cost $200/SF in Q4 2022,
then it is expected to cost $202.85/SF in Q3 2023, a 1.4% total increase.

Cost Growth (Year-over-Year %) By Cost Component



NBCI Growth (Year-over-Year %) – Market vs. U.S.

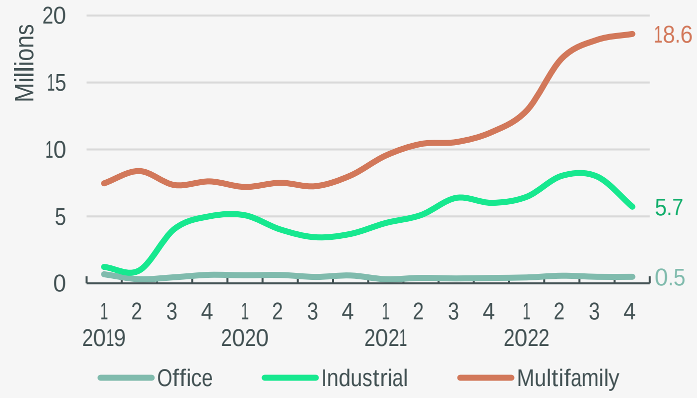


Forecasted NBCI Growth by Property Type – Next 2 Years

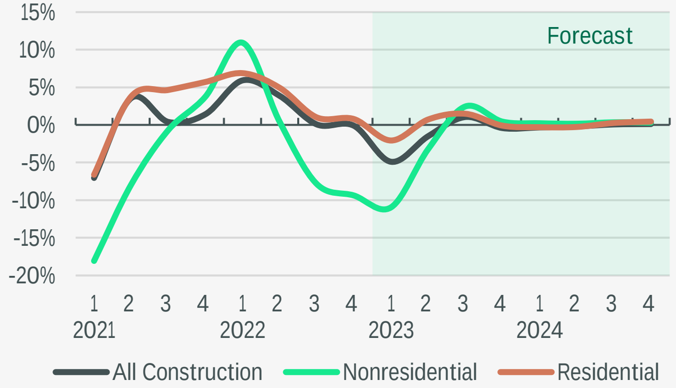
	Cumulative % Change from Q4 2022							
Property Type	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024
Office	1.0%	1.4%	1.4%	1.4%	1.6%	1.6%	1.8%	2.0%
Industrial	1.4%	2.0%	2.3%	2.5%	2.9%	3.1%	3.5%	3.9%
Multifamily	1.2%	1.6%	1.8%	2.0%	2.0%	1.9%	1.9%	2.0%
Healthcare	1.0%	1.5%	1.7%	1.9%	2.3%	2.6%	2.9%	3.3%
Life Sciences	1.3%	1.9%	2.1%	2.4%	2.7%	3.0%	3.3%	3.7%
Total Market	1.3%	1.8%	2.0%	2.2%	2.3%	2.5%	2.7%	3.0%
U.S. Average	1.2%	1.8%	2.3%	2.7%	3.3%	3.9%	4.6%	5.2%

KEY LOCAL MARKET FACTORS

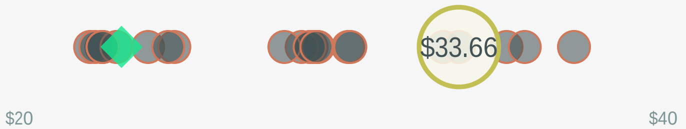
Sq. Ft. Under Construction by Property Type



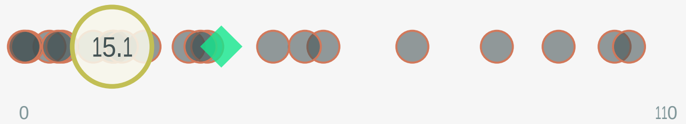
Job Growth (Year-over-Year %) by Subsector



Median Hourly Wage - Construction Occupations



Active Construction Apprenticeships per 1,000 Workers



◆ = U.S. Average ○ = New Jersey ● = Other TCC Markets

Note: Life Sciences under construction is included in office or industrial (depending on primary use type)

Sources: Oxford Economics, Costar Group, Bureau of Economic Analysis, Bureau of Labor Statistics, Department of Labor, CBRE Strategic Investment Consulting, Q4 2022

Newport Beach

12.7% Cost Growth – Last 12 Months
% Change in NBCI Q4 2021-Q4 2022
Rank #9, U.S. = 12.9%

3.0% Cost Growth – Next 12 Months
% Change in NBCI Q4 2022-Q4 2023
Rank #12, U.S. = 2.7%

1.5% % of NRA Under Construction
As of Q4 2022
Rank #23, U.S. = 3.5%

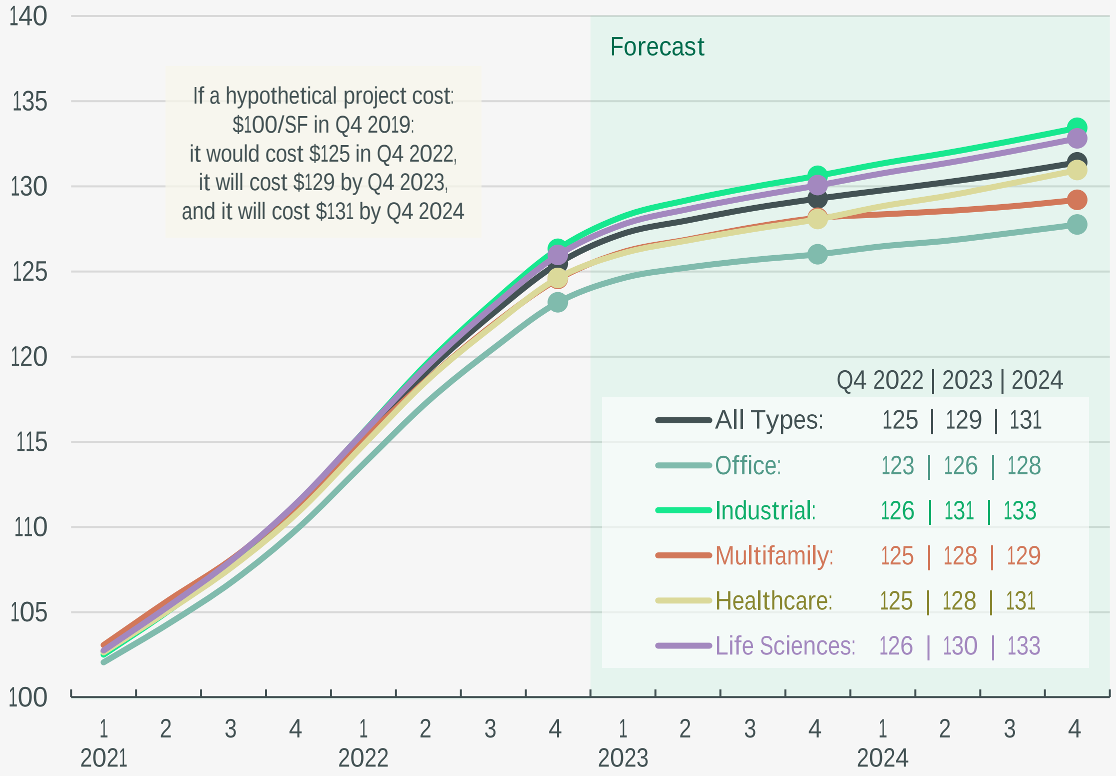
The Newport Beach/Orange County market is the most inactive construction market in this report, with only 1.5% of the NRA under construction as of Q4. The Newport Beach market has been chronically inactive since the end of the Global Financial Crisis and the share of NRA under construction fell below 1% in 2019. Even though activity is light relative to other markets, the jump to 1.5% in late 2022 was double the pace of activity before COVID, so this increase put pressure on contractor demand and hence drove up growth in margins.

Multifamily construction rose particularly quickly in 2022, going from about 6,000 units under construction at the beginning of the year to more than 7,500 by Q4. Given the persistent housing shortage in Orange County and nearby Southern California markets, demand for multifamily should remain high if developers are able to secure permits and financing, though building at scale is always a challenge in the market.

Industrial construction also soared in early 2022 but has since plateaued with starts roughly keeping up with deliveries. One notable project is Goodman North America's Goodman Logistics Center in Fullerton. Building 3 finished construction in late 2022 and added 487,000 sq. ft. Three additional buildings totaling just over 1 million sq. ft. are set to deliver in Q2 2023. The industrial pipeline is fairly light in Orange County, meaning industrial construction should slow substantially as more projects deliver in 2023.

After SteelWave delivered the 450,000-sq.-ft. Press project in August 2022, office construction has been virtually non-existent. Most of the current office under construction is for a specialized use like medical office or telecom/back office. Though several large proposed projects sit in the pipeline, many have been deferred. One notable example was the Barranca Building in Irvine/Tustin, which originally was set to deliver this year but has been on hold.

TCC/CBRE New Building Cost Index (NBCI) by Property Type (2019 Q4 = 100)



Source: Bureau of Labor Statistics, Bureau of Economic Analysis, CoStar Group, Oxford Economics, CBRE Strategic Investment Consulting, Q1 2023.

GC expectations for the next 3 months:

- Lead times for steel/metals, HVAC and electrical are expected to lengthen
- A shortage is expected for the materials above as well as for thermal & moisture protection
- Materials cost inflation for concrete, thermal/ moisture protection, openings, HVAC and electrical will slow from last quarter
- Materials cost inflation for other categories will be similar to recent growth
- Labor cost growth is expected to slow after more intense growth in recent quarters
- Under Construction Sq. Ft. will slightly slow with several large apartment projects delivering in Q1.

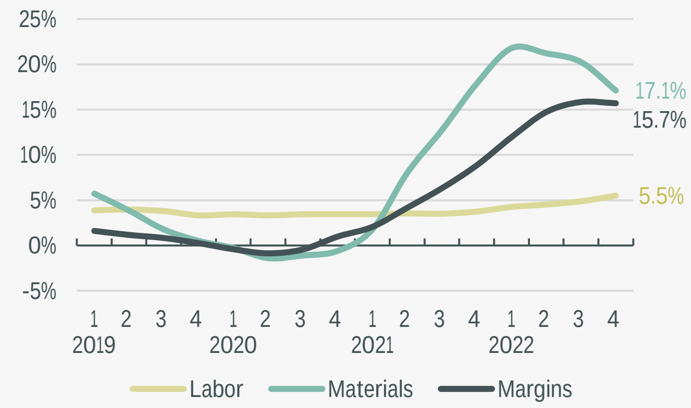
Newport Beach

CONSTRUCTION COST BREAKDOWN

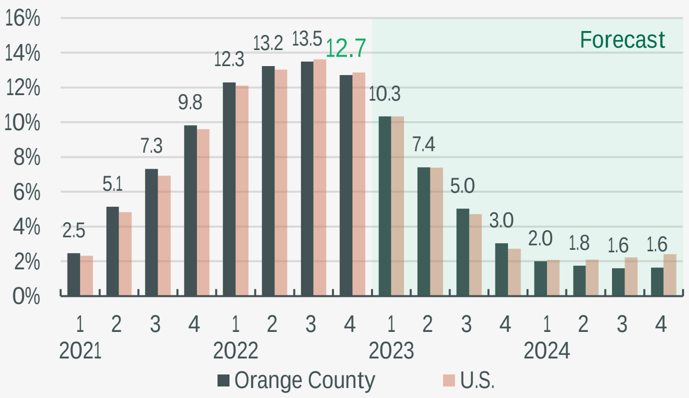
Interpret the charts below:
In Q4 2022, total new building costs increased by 12.7% since Q4 2021. Labor costs grew by 5.5%, Materials by 17.1%, and Margins by 15.7% over the same period.

Example for using the table below:
If a new office project in Newport Beach cost $200/SF in Q4 2022, then it is expected to cost $204.05/SF in Q3 2023, a 2.0% total increase.

Cost Growth (Year-over-Year %) By Cost Component



NBCI Growth (Year-over-Year %) – Market vs. U.S.

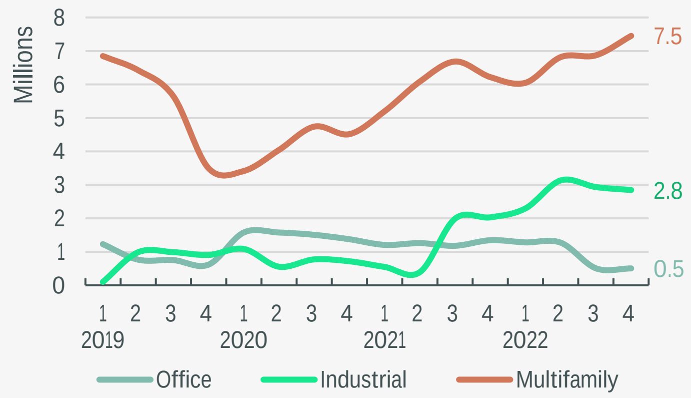


Forecasted NBCI Growth by Property Type – Next 2 Years

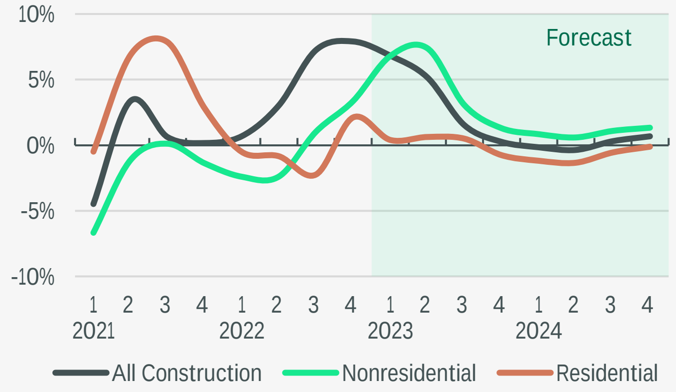
Property Type	Cumulative % Change from Q4 2022 Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024
Office	1.2%	1.7%	2.0%	2.3%	2.7%	2.9%	3.3%	3.7%
Industrial	1.5%	2.3%	2.9%	3.4%	4.0%	4.5%	5.0%	5.6%
Multifamily	1.3%	1.9%	2.4%	2.9%	3.1%	3.2%	3.4%	3.7%
Healthcare	1.2%	1.8%	2.3%	2.8%	3.4%	3.9%	4.5%	5.1%
Life Sciences	1.4%	2.1%	2.7%	3.3%	3.8%	4.3%	4.9%	5.4%
Total Market	1.4%	2.0%	2.6%	3.0%	3.4%	3.8%	4.2%	4.7%
U.S. Average	1.2%	1.8%	2.3%	2.7%	3.3%	3.9%	4.6%	5.2%

KEY LOCAL MARKET FACTORS

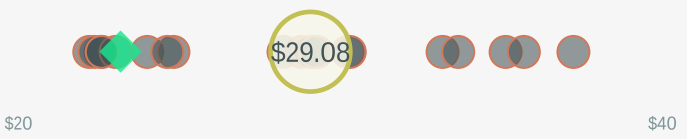
Sq. Ft. Under Construction by Property Type



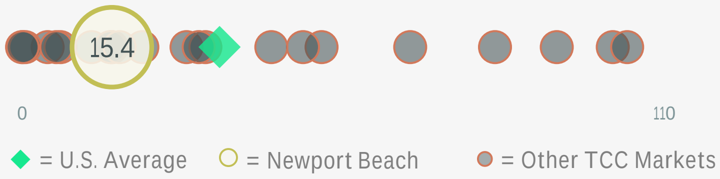
Job Growth (Year-over-Year %) by Subsector



Median Hourly Wage - Construction Occupations



Active Construction Apprenticeships per 1,000 Workers



Note: Life Sciences under construction is included in office or industrial (depending on primary use type)

Sources: Oxford Economics, Costar Group, Bureau of Economic Analysis, Bureau of Labor Statistics, Department of Labor, CBRE Strategic Investment Consulting, Q4 2022

Philadelphia

12.8% Cost Growth – Last 12 Months
% Change in NBCI Q4 2021-Q4 2022
Rank #8, U.S. = 12.9%

3.3% Cost Growth – Next 12 Months
% Change in NBCI Q4 2022-Q4 2023
Rank #10, U.S. = 2.7%

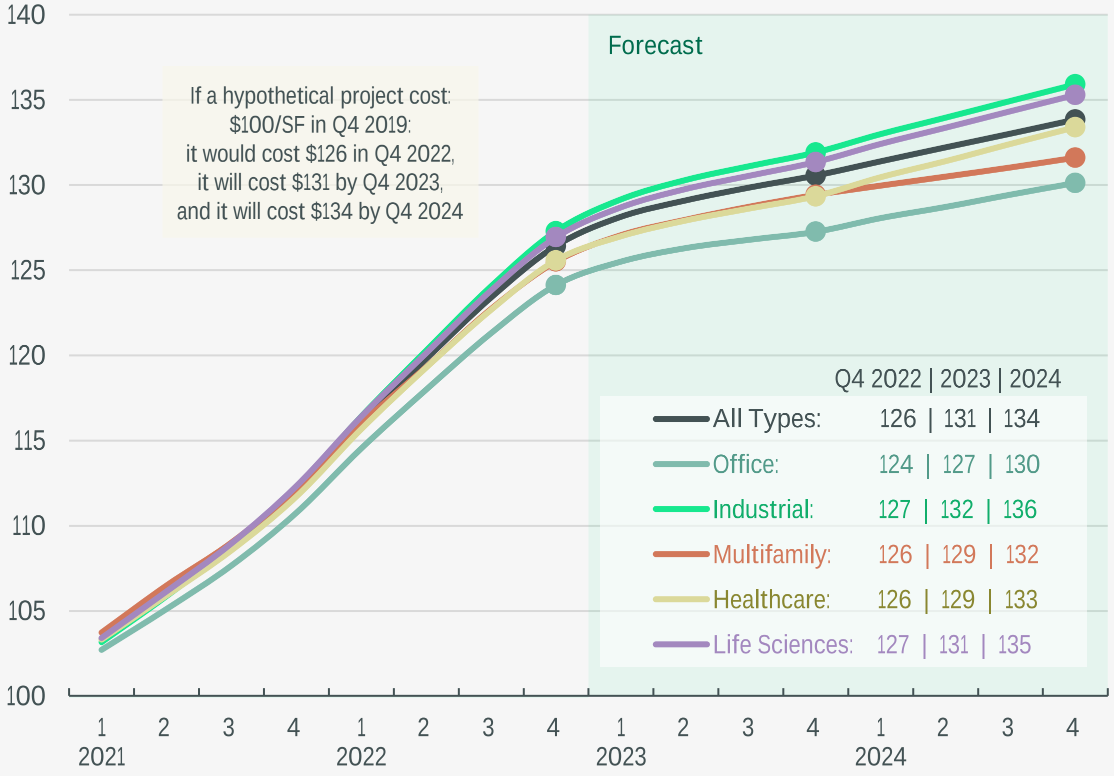
3.9% % of NRA Under Construction
As of Q4 2022
Rank #10, U.S. = 3.5%

Philadelphia has been one of the most active industrial construction markets in the U.S. in recent years, with more than 25 million sq. ft. under construction at the end of 2022. From 2000-2019, the market never exceeded 10 million sq. ft. of industrial under construction and averaged ±4 million sq. ft. There are 7 one-million-sq.-ft.+ buildings (plus some building parks exceeding that across multiple buildings) underway, all expected to deliver in 2023. The largest single-building underway is Hillwood Investment Properties' 1.7-million-sq.-ft. distribution facility at Bainbridge Logistics Center in Cecil County, currently 100% available. Two other properties totaling 1.6 million sq. ft. are also underway at the center and all three are expected to deliver in late 2023. NorthPoint Development also has four large buildings totaling 4.2 million sq. ft. underway at Keystone Trade Center in Fairless Hills, all of which are expected late in the year.

The later deliveries combined with a robust development pipeline should sustain activity throughout the year. TCC is in the final planning stages of a 1.1-million-sq.-ft. distribution facility in Elkton Commerce Center which is set to break ground later this year and several other large proposed projects are likely to get underway at some point in 2023.

Several life sciences projects are underway in Philadelphia with a couple more in the pipeline, making it one of the more active secondary biotech markets. The largest active project is Brandywine Realty's 478,000-sq.-ft. office/lab building at Schuylkill Yards in University City. Three other lab buildings are also planned on the site though construction timing is TBD. Spark Therapeutics is also investing $575 million in the new Roche Global Center in University City that is expected to break ground in mid-2023 and will add ±500,000 sq. ft.

TCC/CBRE New Building Cost Index (NBCI) by Property Type (2019 Q4 = 100)



Source: Bureau of Labor Statistics, Bureau of Economic Analysis, CoStar Group, Oxford Economics, CBRE Strategic Investment Consulting, Q1 2023.

GC expectations for the next 3 months:

- ▲ Lead times for equipment, HVAC and electrical are expected to lengthen
- ▲ A shortage is expected for HVAC, electrical and appliances
- ▶ Steel & metal costs will flatten after dropping last quarter
- ▲ Wood, Plastics, & Composites costs will begin rising again
- ▼ Labor cost growth is expected to flatten and potentially even fall in the next quarter
- ▶ Under Construction Sq. Ft. will largely keep pace with last quarter but starts will slightly slow

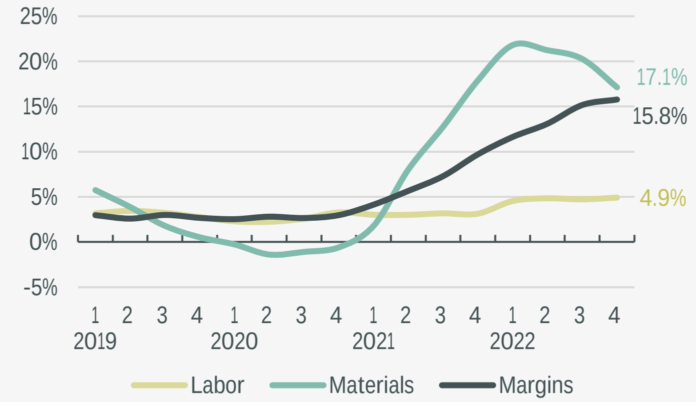
Philadelphia

CONSTRUCTION COST BREAKDOWN

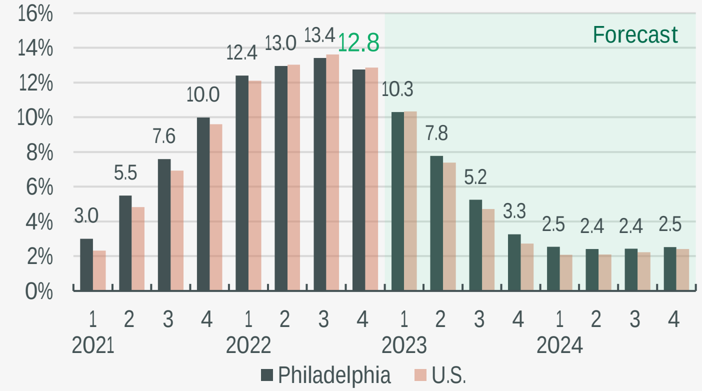
Interpret the charts below:
In Q4 2022, total new building costs increased by 12.8% since Q4 2021.
Labor costs grew by 4.9%, Materials by 17.1%, and Margins by 15.8% over the same period.

Example for using the table below:
If a new office project in Philadelphia cost $200/SF in Q4 2022, then it is expected to cost $204.31/SF in Q3 2023, a 2.2% total increase.

Cost Growth (Year-over-Year %) By Cost Component



NBCI Growth (Year-over-Year %) – Market vs. U.S.

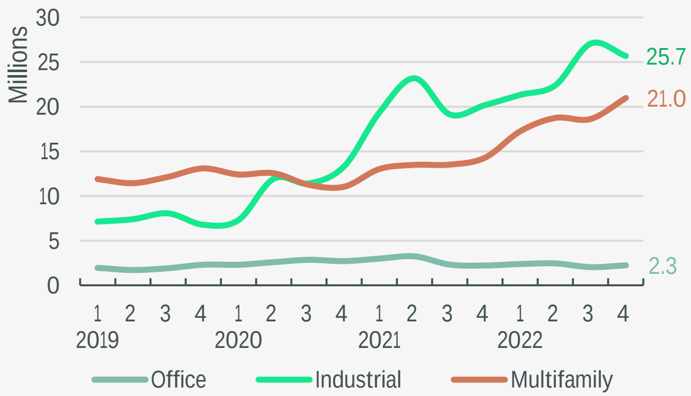


Forecasted NBCI Growth by Property Type – Next 2 Years

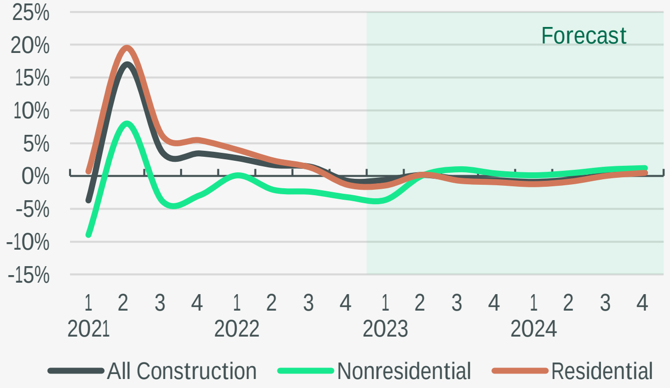
	Cumulative % Change from Q4 2022							
Property Type	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024
Office	1.1%	1.8%	2.2%	2.5%	3.2%	3.7%	4.3%	4.8%
Industrial	1.5%	2.4%	3.0%	3.6%	4.5%	5.2%	6.0%	6.8%
Multifamily	1.2%	2.0%	2.6%	3.1%	3.6%	4.0%	4.4%	4.9%
Healthcare	1.1%	1.9%	2.4%	3.0%	3.9%	4.6%	5.4%	6.2%
Life Sciences	1.4%	2.2%	2.9%	3.5%	4.3%	5.1%	5.8%	6.6%
Total Market	1.4%	2.1%	2.7%	3.3%	3.9%	4.6%	5.2%	5.9%
U.S. Average	1.2%	1.8%	2.3%	2.7%	3.3%	3.9%	4.6%	5.2%

KEY LOCAL MARKET FACTORS

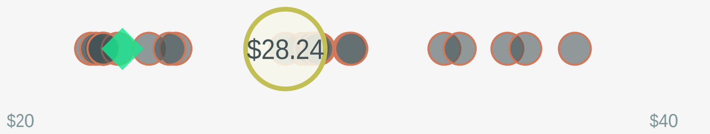
Sq. Ft. Under Construction by Property Type



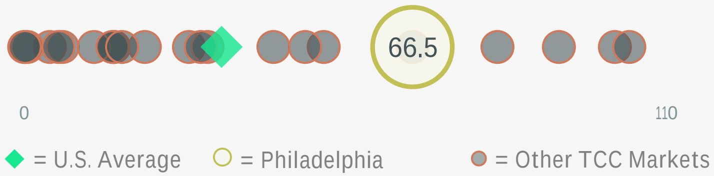
Job Growth (Year-over-Year %) by Subsector



Median Hourly Wage - Construction Occupations



Active Construction Apprenticeships per 1,000 Workers



Note: Life Sciences under construction is included in office or industrial (depending on primary use type)

Sources: Oxford Economics, Costar Group, Bureau of Economic Analysis, Bureau of Labor Statistics, Department of Labor, CBRE Strategic Investment Consulting, Q4 2022

Phoenix

13.4% Cost Growth – Last 12 Months
% Change in NBCI Q4 2021-Q4 2022
Rank #3, U.S. = 12.9%

4.5% Cost Growth – Next 12 Months
% Change in NBCI Q4 2022-Q4 2023
Rank #1, U.S. = 2.7%

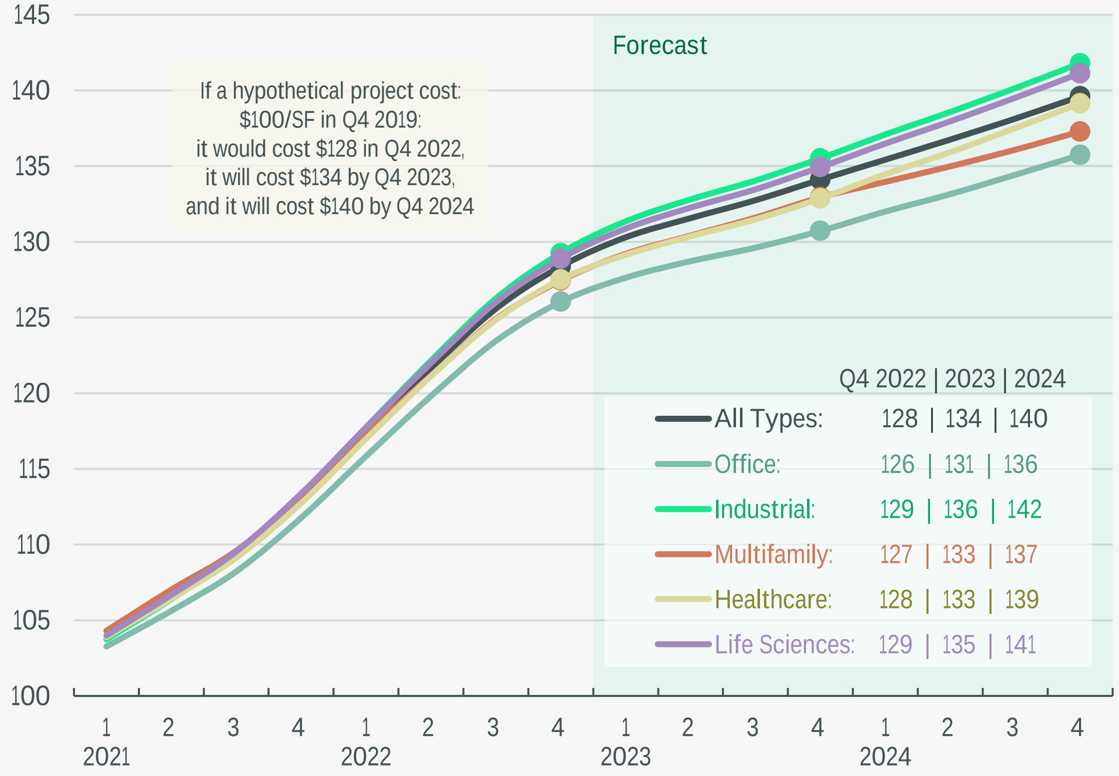
7.6% % of NRA Under Construction
As of Q4 2022
Rank #3, U.S. = 3.5%

Phoenix is the third most active market in terms of share of its existing inventory currently underway. This growth is primarily being driven by an immense rise in industrial construction, which exceeded 46 million sq. ft. at the end of 2022 and is nearly five times as much construction that was underway at the end of 2019. The market's expansive flat terrain, robust intestate highway access, and strategic location between Southern California, Mexico and Texas make it a prime logistics market.

Most of the new industrial construction is in the Southwest Valley and Northwest Valley. The largest project is Ross Stores' 1.6-million-sq.-ft. distribution facility in Goodyear in the Southwest, which is set to deliver late 2023/early 2024. In the Northwest, Prologis recently broke ground on Phase II of Prologis 303 Business Park in Glendale, which will add 1.2 million sq. ft. of warehouse when complete in 2024. Two mega-projects could substantially increase activity if they begin construction in 2023. Lincoln Property Company recently broke ground on phase one of Goodyear AirPark which will add about 1.6 million sq. ft. across six buildings, but the full project will include up to 8 million sq. ft. if further phases are started later in the year. KORE Power also plans to build a massive 2-million-sq.-ft. battery manufacturing plant in Buckeye with construction slated to start in 2023.

A political battle is currently underway in Tempe that could decide the fate of the $2.1 billion Tempe Entertainment District, which would include a 16,000-seat arena to house the Arizona Coyotes hockey team in the first phase. A second phase would add a 68,000-sq.-ft. outdoor event plaza, a 50,000-sq.-ft. music venue, a 200-room boutique hotel, 160,000 sq. ft. of Class A office space, 80,000 sq. ft. of retail and 195 multifamily units, with more office, retail, multifamily and hotel in later phases. Tempe residents will vote to approve the project in a special election in May.

TCC/CBRE New Building Cost Index (NBCI) by Property Type (2019 Q4 = 100)



Source: Bureau of Labor Statistics, Bureau of Economic Analysis, CoStar Group, Oxford Economics, CBRE Strategic Investment Consulting, Q1 2023.

GC expectations for the next 3 months:

- ▲ Lead times for HVAC and electrical are expected to lengthen
- ▲ A shortage is expected for concrete, HVAC and electrical materials
- ▼ Steel & metals costs will drop after flattening last quarter
- ▼ Materials costs for other categories will be flat after rising last quarter
- ▼ Labor costs will rise but at a much slower pace than last quarter
- ▲ Under Construction Sq. Ft. will pick up as starts exceed deliveries in Q1

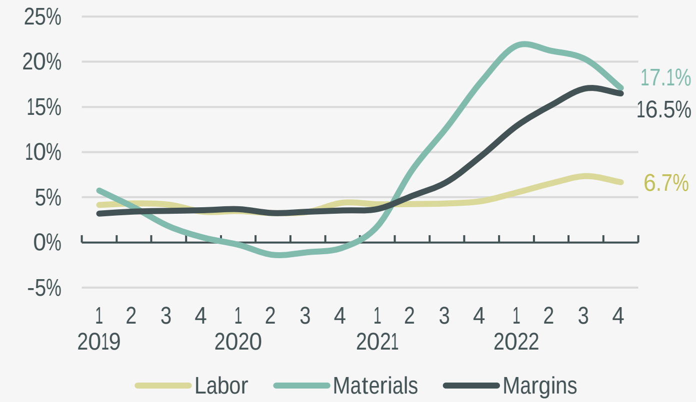
Phoenix

CONSTRUCTION COST BREAKDOWN

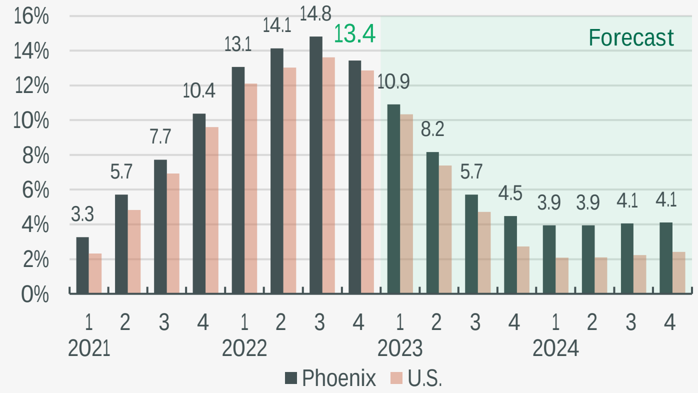
Interpret the charts below:
In Q4 2022, total new building costs increased by 13.4% since Q4 2021.
Labor costs grew by 6.7%, Materials by 17.1%, and Margins by 16.5% over the same period.

Example for using the table below:
If a new office project in Phoenix cost $200/SF in Q4 2022,
then it is expected to cost $205.68/SF in Q3 2023, a 2.8% total increase.

Cost Growth (Year-over-Year %) By Cost Component



NBCI Growth (Year-over-Year %) – Market vs. U.S.

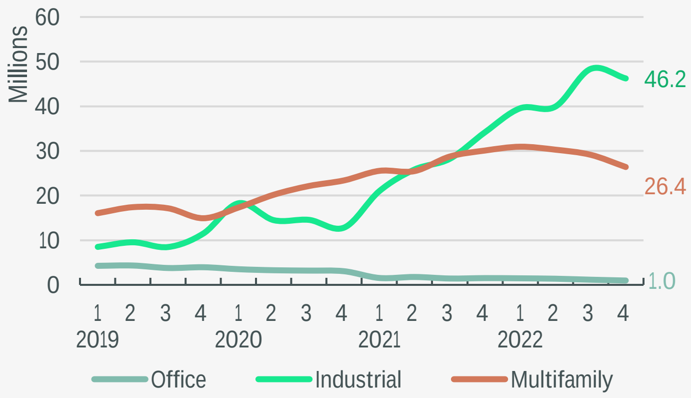


Forecasted NBCI Growth by Property Type – Next 2 Years

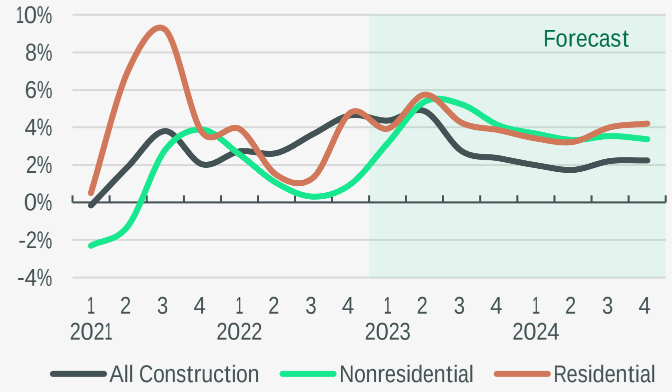
Property Type	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024
	Cumulative % Change from Q4 2022							
Office	1.3%	2.1%	2.8%	3.7%	4.7%	5.6%	6.7%	7.7%
Industrial	1.6%	2.7%	3.7%	4.8%	6.1%	7.2%	8.4%	9.7%
Multifamily	1.4%	2.3%	3.3%	4.3%	5.1%	5.9%	6.8%	7.7%
Healthcare	1.3%	2.2%	3.1%	4.2%	5.5%	6.6%	7.8%	9.1%
Life Sciences	1.5%	2.6%	3.5%	4.7%	5.9%	7.0%	8.2%	9.5%
Total Market	1.5%	2.5%	3.4%	4.5%	5.5%	6.5%	7.6%	8.8%
U.S. Average	1.2%	1.8%	2.3%	2.7%	3.3%	3.9%	4.6%	5.2%

KEY LOCAL MARKET FACTORS

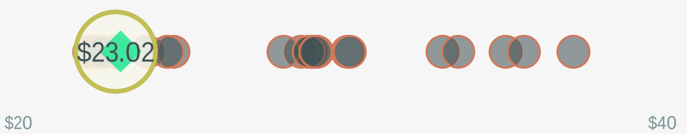
Sq. Ft. Under Construction by Property Type



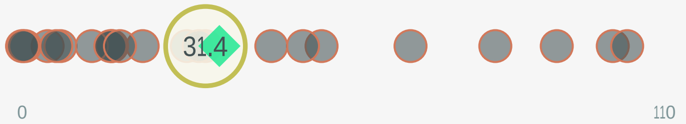
Job Growth (Year-over-Year %) by Subsector



Median Hourly Wage - Construction Occupations



Active Construction Apprenticeships per 1,000 Workers



= U.S. Average   = Phoenix   = Other TCC Markets

Note: Life Sciences under construction is included in office or industrial (depending on primary use type)

Sources: Oxford Economics, Costar Group, Bureau of Economic Analysis, Bureau of Labor Statistics, Department of Labor, CBRE Strategic Investment Consulting, Q4 2022

Portland

12.6% Cost Growth – Last 12 Months
% Change in NBCI Q4 2021-Q4 2022
Rank #12, U.S. = 12.9%

4.4% Cost Growth – Next 12 Months
% Change in NBCI Q4 2022-Q4 2023
Rank #2, U.S. = 2.7%

2.6% % of NRA Under Construction
As of Q4 2022
Rank #18, U.S. = 3.5%

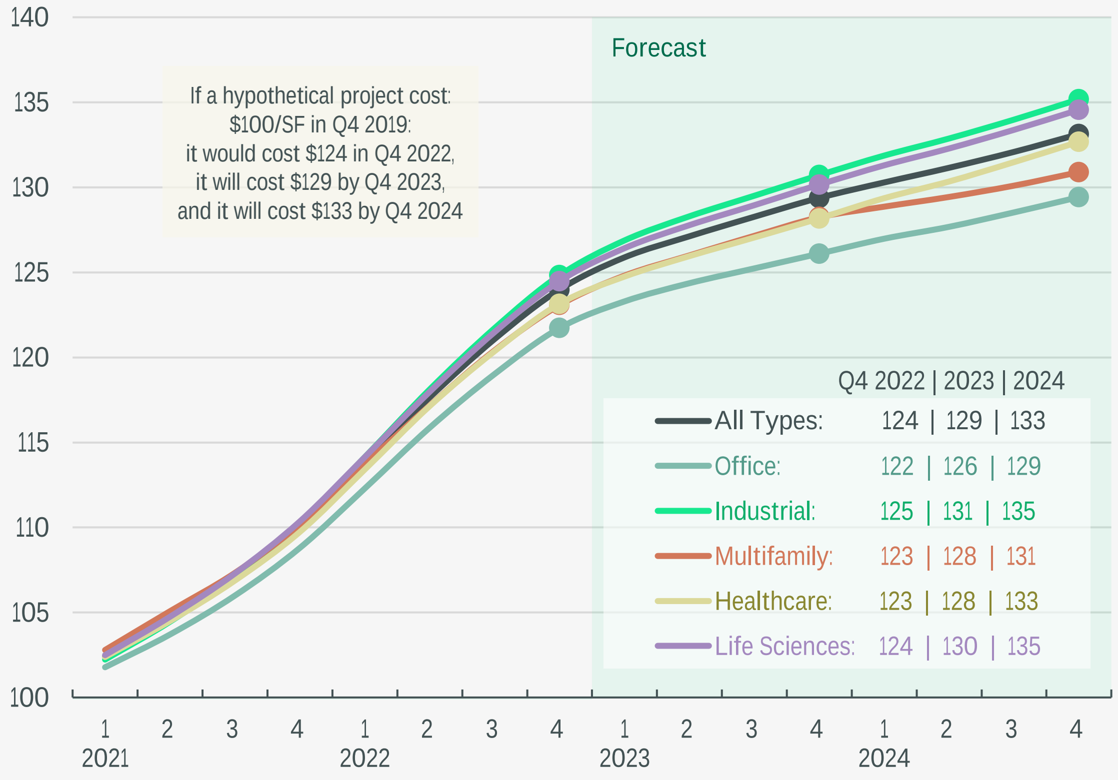
Construction activity in Portland has mostly lagged other markets. Most markets began their upswings in new construction starts in 2021, while Portland didn't see much of an uptick until 2022 (driven by a rise in multifamily construction). Wage growth is among the highest in the U.S. and that is expected to stick throughout 2023. These factors, combined with lower cost growth to date, will mean higher cost growth in Portland relative to other markets in the year ahead.

Industrial activity began slowing in 2022 though a couple of large starts in 2023 should boost activity for the year. Deffenbaugh Properties recently broke ground on 682,000 sq. ft. of distribution space at Burnt Creek Industrial Park in Orchards, which isn't set to deliver until early 2024. It is the largest active industrial project in the market. A private developer is in the final planning stages and expected to break ground on the 169,000-sq.-ft. Wall Street Commerce Center in Tigard in mid-2023.

The largest office project underway broke ground late in 2022. Block 1 at The Waterfront in Vancouver is a 165,000-sq.-ft. Class A office being developed by Lincoln Property Company and is expected to be under construction through 2025. The next largest office property is set to deliver in Q2 2023. Downtown Development Group is nearing completion of The Offices at 11W, which will add 134,000 sq. ft. of Class A office with ground floor retail in the Portland CBD. Office activity is likely to slow through 2023 given the state of the Portland office market, unless build-to-suit opportunities emerge.

Multifamily activity has been steadily growing in the market, and most projects underway are not set to deliver until late 2023 or later. Starts are likely to slow, however, given the immense amount of new units set to hit the market over the next couple of years. Completions are expected to peak in 2024 before slowing over the next three years.

TCC/CBRE New Building Cost Index (NBCI) by Property Type (2019 Q4 = 100)



Source: Bureau of Labor Statistics, Bureau of Economic Analysis, CoStar Group, Oxford Economics, CBRE Strategic Investment Consulting, Q1 2023.

GC expectations for the next 3 months:

- ▲ Lead times for openings and electrical are expected to lengthen
- ▲ A shortage is expected for concrete, openings, equipment, HVAC and electrical materials
- ▼ Materials cost inflation for concrete, finishes, plumbing and electrical will slow
- ▶ Materials cost inflation for other categories (except openings increasing) will be similar to recent growth
- ▲ Labor cost increases are expected to accelerate
- ▶ Under Construction Sq. Ft. will largely keep pace with last quarter but starts will slightly slow

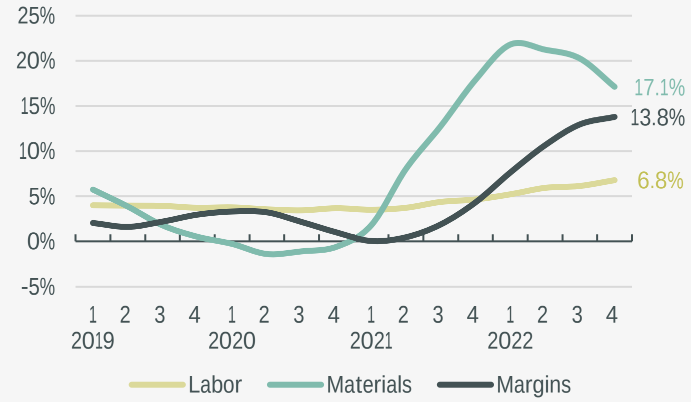
Portland

CONSTRUCTION COST BREAKDOWN

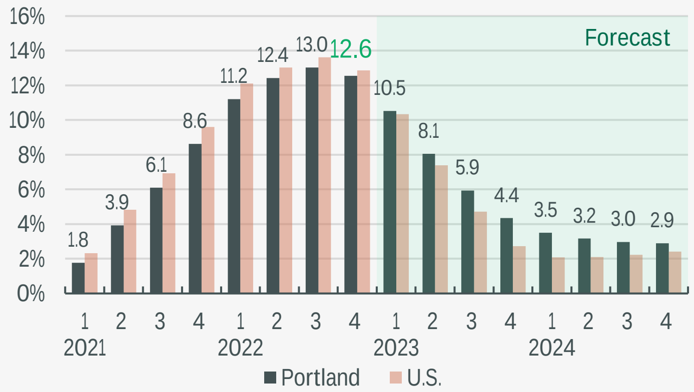
Interpret the charts below:
In Q4 2022, total new building costs increased by 12.6% since Q4 2021.
Labor costs grew by 6.8%, Materials by 17.1%, and Margins by 13.8% over the same period.

Example for using the table below:
If a new office project in Portland cost $200/SF in Q4 2022,
then it is expected to cost $205.77/SF in Q3 2023, a 2.9% total increase.

Cost Growth (Year-over-Year %) By Cost Component



NBCI Growth (Year-over-Year %) – Market vs. U.S.

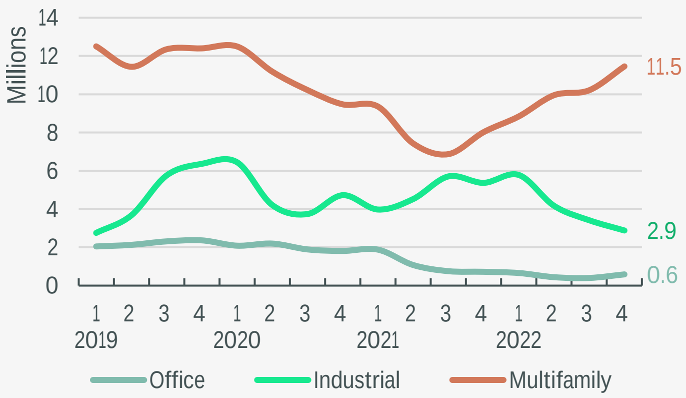


Forecasted NBCI Growth by Property Type – Next 2 Years

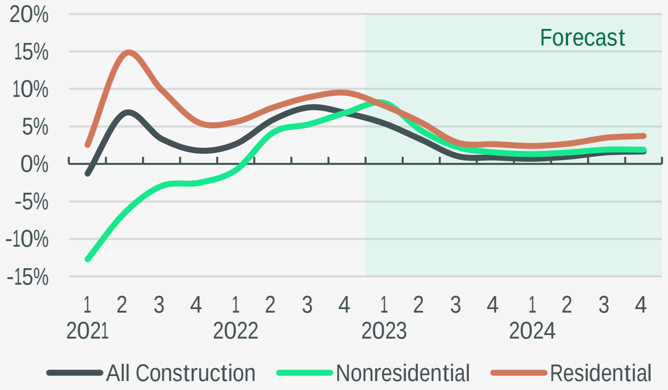
	Cumulative % Change from Q4 2022							
Property Type	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024
Office	1.3%	2.2%	2.9%	3.6%	4.3%	4.9%	5.6%	6.3%
Industrial	1.6%	2.8%	3.8%	4.7%	5.6%	6.4%	7.3%	8.3%
Multifamily	1.4%	2.4%	3.3%	4.2%	4.7%	5.2%	5.7%	6.4%
Healthcare	1.3%	2.3%	3.2%	4.1%	5.0%	5.8%	6.8%	7.7%
Life Sciences	1.6%	2.6%	3.6%	4.6%	5.5%	6.3%	7.2%	8.1%
Total Market	1.5%	2.5%	3.5%	4.4%	5.1%	5.8%	6.5%	7.4%
U.S. Average	1.2%	1.8%	2.3%	2.7%	3.3%	3.9%	4.6%	5.2%

KEY LOCAL MARKET FACTORS

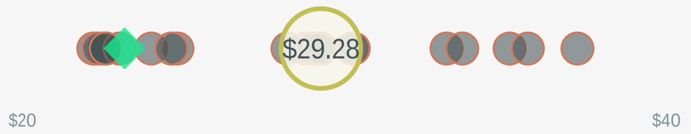
Sq. Ft. Under Construction by Property Type



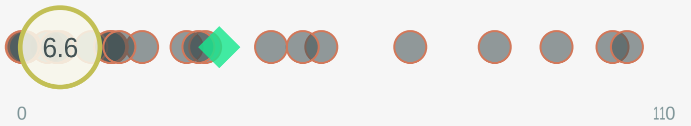
Job Growth (Year-over-Year %) by Subsector



Median Hourly Wage - Construction Occupations



Active Construction Apprenticeships per 1,000 Workers



= U.S. Average = Portland = Other TCC Markets

Note: Life Sciences under construction is included in office or industrial (depending on primary use type)

Sources: Oxford Economics, Costar Group, Bureau of Economic Analysis, Bureau of Labor Statistics, Department of Labor, CBRE Strategic Investment Consulting, Q4 2022

Raleigh

14.6% Cost Growth – Last 12 Months
% Change in NBCI Q4 2021-Q4 2022
Rank #1, U.S. = 12.9%

3.8% Cost Growth – Next 12 Months
% Change in NBCI Q4 2022-Q4 2023
Rank #3, U.S. = 2.7%

7.7% % of NRA Under Construction
As of Q4 2022
Rank #2, U.S. = 3.5%

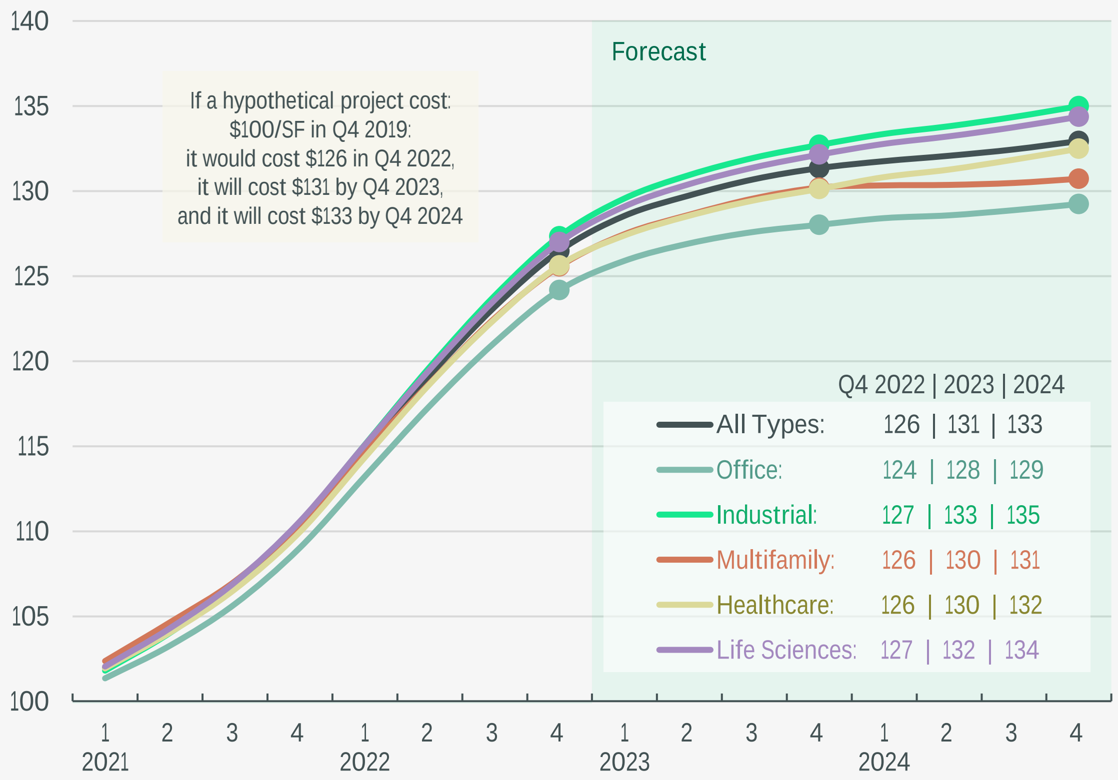
Raleigh is one of the fastest-growing commercial real estate markets in the U.S., trailing only Austin in the share of its inventory underway as of the end of 2022. Historically high construction activity combined with some of the fastest growing wages in the U.S. is why Raleigh had the highest year-over-year NBCI growth rate in Q4 2022. Falling materials prices will help bring down the growth rate over the next year, but continued strong builder demand and labor cost growth means Raleigh is still expected to have the 3rd highest growth rate over the next 12 months.

Raleigh is one the premier life sciences markets in the U.S. and several large projects are underway, many of which recently broke ground. Mainstreet Capital Partners broke ground on INQ 4300 in Q4 2022. The project is a 180,000-sq.-ft. big-box retail repositioning to lab/R&D in Southeast Raleigh and should be completed in late 2023/early 2024. Apollo Global Management broke ground on a 140,000-sq.-ft. lab/R&D building at Catalyst BioCampus in January 2023. At the end of 2022, Crescent Communities broke ground on two buildings at their Yield Holly Springs development. The two buildings underway total 224,000 sq. ft. but will be part of a 2-million-sq.-ft. campus when all buildings are complete.

Office construction (excluding medical and life sciences) has been steadier in Raleigh than most other markets, even speculative development. Kane Realty broke ground on Tower 5 of their North Hills project which will add 349,000 sq. ft. of spec creative office to the Six Forks submarket.

Multifamily has been the largest and fastest-growing segment of the Raleigh market, and many of the largest projects are expected to continue through 2024. The largest project is 401 Assemblage by RST Development, which will add 500 apartment units, 455 townhomes, and 285 single-family homes in the Garner/Fuquay Varina in late 2023.

TCC/CBRE New Building Cost Index (NBCI) by Property Type (2019 Q4 = 100)



Source: Bureau of Labor Statistics, Bureau of Economic Analysis, CoStar Group, Oxford Economics, CBRE Strategic Investment Consulting, Q1 2023.

GC expectations for the next 3 months:

- ▲ Lead times for equipment and electrical are expected to lengthen
- ▶ Lead times for other key materials will remain like recent months
- ▼ Materials cost inflation for concrete, finishes and electrical will slow
- ▶ Materials cost inflation for other categories will be flat or similar to recent growth
- ▶ Labor costs will rise but at virtually the same pace as last quarter
- ▶ Under Construction Sq. Ft. will largely keep pace with last quarter but starts will slightly slow

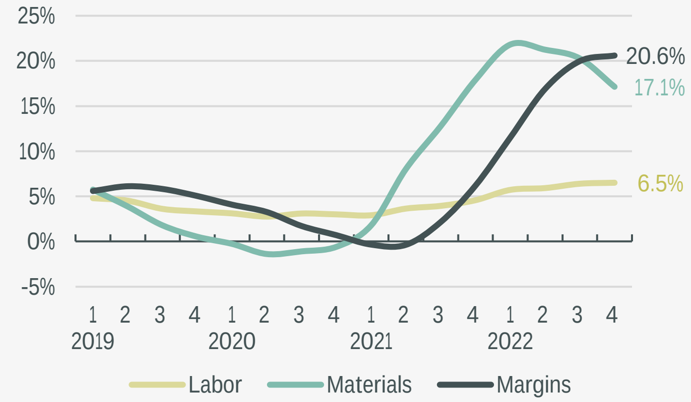
Raleigh

CONSTRUCTION COST BREAKDOWN

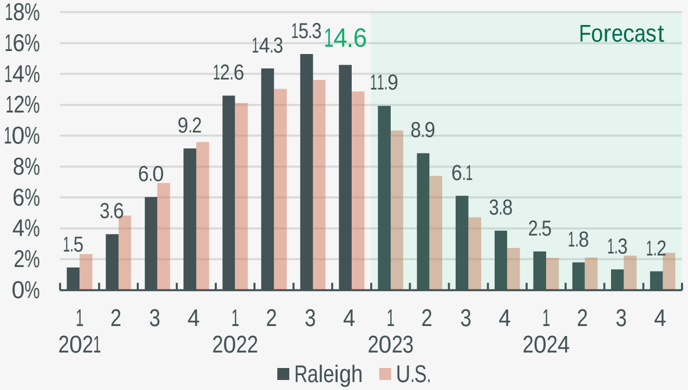
Interpret the charts below:
In Q4 2022, total new building costs increased by 14.6% since Q4 2021.
Labor costs grew by 6.5%, Materials by 17.1%, and Margins by 20.6% over the same period.

Example for using the table below:
If a new office project in Raleigh cost $200/SF in Q4 2022,
then it is expected to cost $205.52/SF in Q3 2023, a 2.8% total increase.

Cost Growth (Year-over-Year %) By Cost Component



NBCI Growth (Year-over-Year %) – Market vs. U.S.

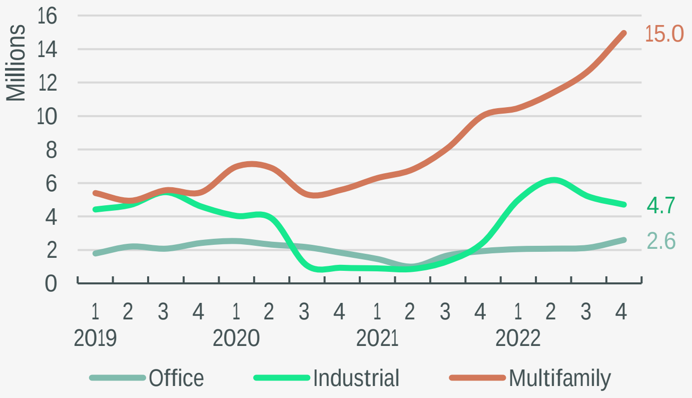


Forecasted NBCI Growth by Property Type – Next 2 Years

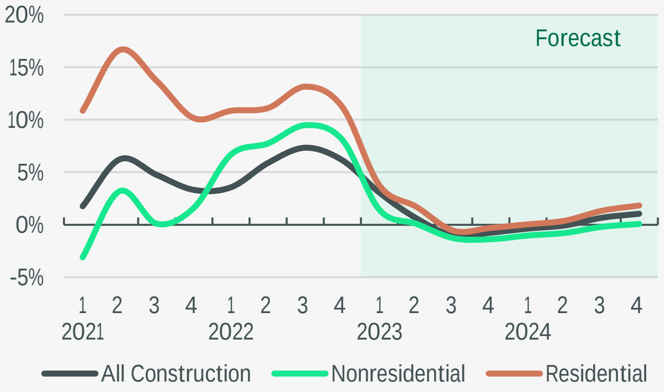
Property Type	Cumulative % Change from Q4 2022							
	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024
Office	1.4%	2.2%	2.8%	3.1%	3.4%	3.5%	3.8%	4.1%
Industrial	1.7%	2.8%	3.6%	4.2%	4.7%	5.1%	5.5%	6.0%
Multifamily	1.5%	2.4%	3.2%	3.7%	3.8%	3.8%	3.9%	4.1%
Healthcare	1.4%	2.3%	3.0%	3.6%	4.1%	4.5%	4.9%	5.5%
Life Sciences	1.7%	2.7%	3.5%	4.1%	4.6%	4.9%	5.3%	5.8%
Total Market	1.6%	2.6%	3.3%	3.8%	4.2%	4.4%	4.7%	5.1%
U.S. Average	1.2%	1.8%	2.3%	2.7%	3.3%	3.9%	4.6%	5.2%

KEY LOCAL MARKET FACTORS

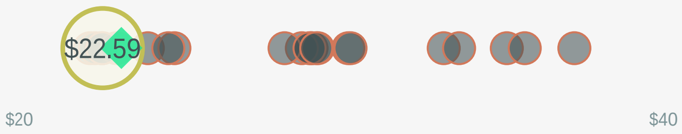
Sq. Ft. Under Construction by Property Type



Job Growth (Year-over-Year %) by Subsector



Median Hourly Wage - Construction Occupations



Active Construction Apprenticeships per 1,000 Workers

Note: Life Sciences under construction is included in office or industrial (depending on primary use type)

Sources: Oxford Economics, Costar Group, Bureau of Economic Analysis, Bureau of Labor Statistics, Department of Labor, CBRE Strategic Investment Consulting, Q4 2022

San Diego

11.4% Cost Growth – Last 12 Months
% Change in NBCI Q4 2021-Q4 2022
Rank #23, U.S. = 12.9%

3.4% Cost Growth – Next 12 Months
% Change in NBCI Q4 2022-Q4 2023
Rank #7, U.S. = 2.7%

2.6% % of NRA Under Construction
As of Q4 2022
Rank #17, U.S. = 3.5%

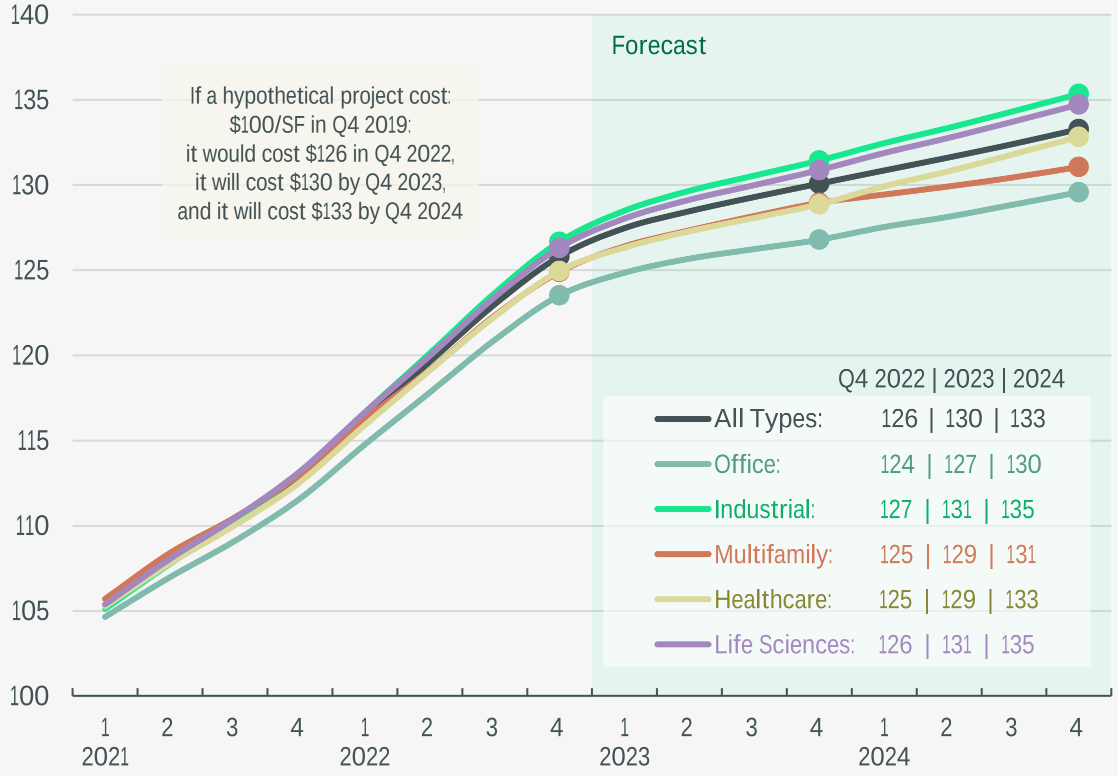
Construction costs in the San Diego market scaled sooner than many other markets because construction activity ramped up in late 2020 and into 2021 before most markets saw a construction boom. Activity in San Diego leveled off in 2022 and the market ended the year with the slowest year-over-year change in NBCI. Since the end of 2019, however, costs have grown more than the average market.

Though activity has slowed, several large and transformative projects are underway. One such project is IQHQ's Research and Development District (RaDD) which is underway on San Diego's Bayfront. The $1.6-billion project will be the first dedicated life science campus in Downtown San Diego, and it is the largest urban commercial waterfront site on California's Pacific coast. A 372,000-sq.-ft. headquarters for the U.S. Navy was delivered on the site in 2020 by Manchester Financial Group, but the new lab/office portions will be delivered by IQHQ in late 2023/early 2024 and will add 1.7 million sq. ft. across five buildings (with some ground-floor retail).

Life sciences/office is very active in the San Diego market. Another massive Downtown project will have a life science component mixed with creative office and retail. The Campus at Horton is a repositioning of a former mall in the heart of Downtown San Diego and will include 410,000 sq. ft. of lab/office mix, 205,000 sq. ft. of creative office and 108,000 sq. ft. of retail across three buildings. It is expected to deliver in Q4 2023. At the end of 2022, Longfellow Real Estate Partners broke ground on a 316,000-sq.-ft. lab facility in Sorrento Mesa called BioTerra. The project is expected to deliver in late 2024.

Though not a focus of this report, the largest construction project by far in San Diego is the $2.7-billion renovation of Terminal 1 at the San Diego International Airport, which will consume considerable builder resources through its completion in 2028.

TCC/CBRE New Building Cost Index (NBCI) by Property Type (2019 Q4 = 100)



Source: Bureau of Labor Statistics, Bureau of Economic Analysis, CoStar Group, Oxford Economics, CBRE Strategic Investment Consulting, Q1 2023.

GC expectations for the next 3 months:

- Lead times for electrical are expected to lengthen
- Lead times for other key materials will remain like recent months
- Materials cost inflation for concrete, openings, HVAC and electrical will slow from last quarter
- Materials cost inflation for other categories will resemble recent growth
- Labor costs will rise but at virtually the same pace as last quarter
- Under Construction Sq. Ft. will be virtually the same as last quarter with few starts or deliveries

Return to Directory

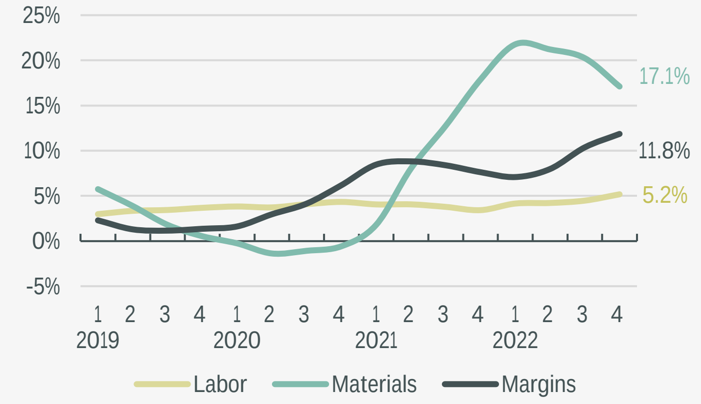
San Diego

CONSTRUCTION COST BREAKDOWN

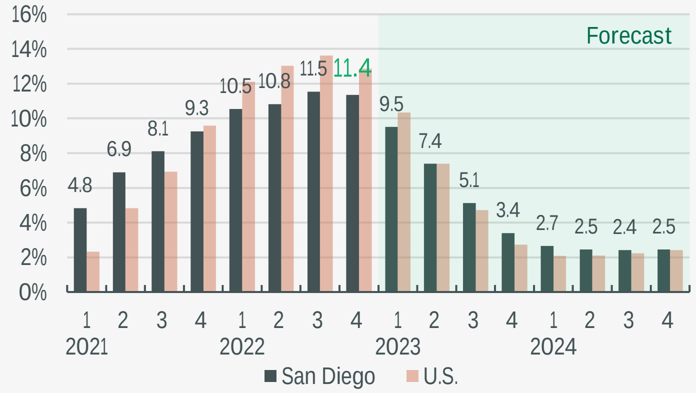
Interpret the charts below:
In Q4 2022, total new building costs increased by 11.4% since Q4 2021.
Labor costs grew by 5.2%, Materials by 17.1%, and Margins by 11.8% over the same period.

Example for using the table below:
If a new office project in San Diego cost $200/SF in Q4 2022,
then it is expected to cost $204.41/SF in Q3 2023, a 2.2% total increase.

Cost Growth (Year-over-Year %) By Cost Component



NBCI Growth (Year-over-Year %) – Market vs. U.S.

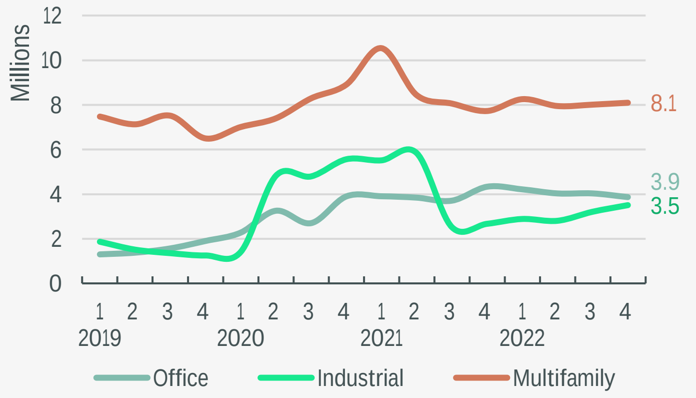


Forecasted NBCI Growth by Property Type – Next 2 Years

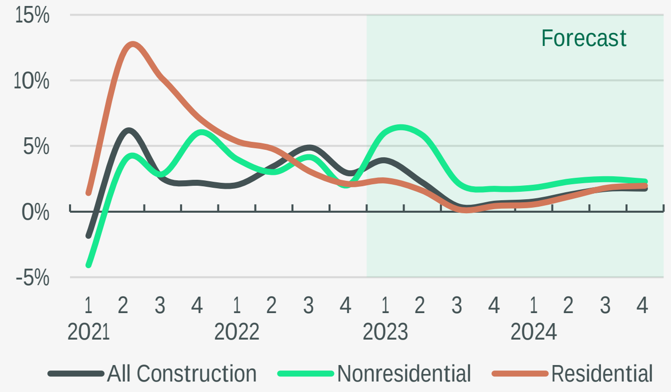
Property Type	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024
	Cumulative % Change from Q4 2022							
Office	1.1%	1.8%	2.2%	2.7%	3.3%	3.7%	4.3%	4.9%
Industrial	1.4%	2.4%	3.1%	3.8%	4.6%	5.3%	6.1%	6.9%
Multifamily	1.2%	2.0%	2.6%	3.2%	3.6%	4.0%	4.4%	4.9%
Healthcare	1.1%	1.9%	2.5%	3.1%	4.0%	4.7%	5.5%	6.3%
Life Sciences	1.4%	2.2%	2.9%	3.6%	4.4%	5.1%	5.9%	6.7%
Total Market	1.3%	2.1%	2.8%	3.4%	4.0%	4.6%	5.3%	5.9%
U.S. Average	1.2%	1.8%	2.3%	2.7%	3.3%	3.9%	4.6%	5.2%

KEY LOCAL MARKET FACTORS

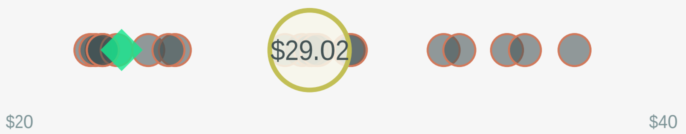
Sq. Ft. Under Construction by Property Type



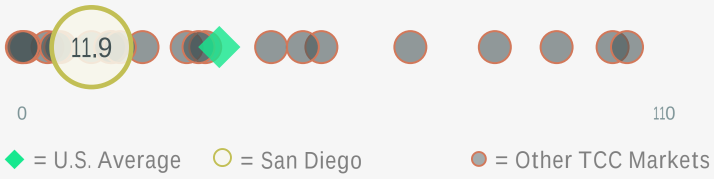
Job Growth (Year-over-Year %) by Subsector



Median Hourly Wage - Construction Occupations



Active Construction Apprenticeships per 1,000 Workers



Note: Life Sciences under construction is included in office or industrial (depending on primary use type)

Sources: Oxford Economics, Costar Group, Bureau of Economic Analysis, Bureau of Labor Statistics, Department of Labor, CBRE Strategic Investment Consulting, Q4 2022

San Francisco

11.7% Cost Growth – Last 12 Months
% Change in NBCI Q4 2021-Q4 2022
Rank #21, U.S. = 12.9%

2.8% Cost Growth – Next 12 Months
% Change in NBCI Q4 2022-Q4 2023
Rank #17, U.S. = 2.7%

3.3% % of NRA Under Construction
As of Q4 2022
Rank #15, U.S. = 3.5%

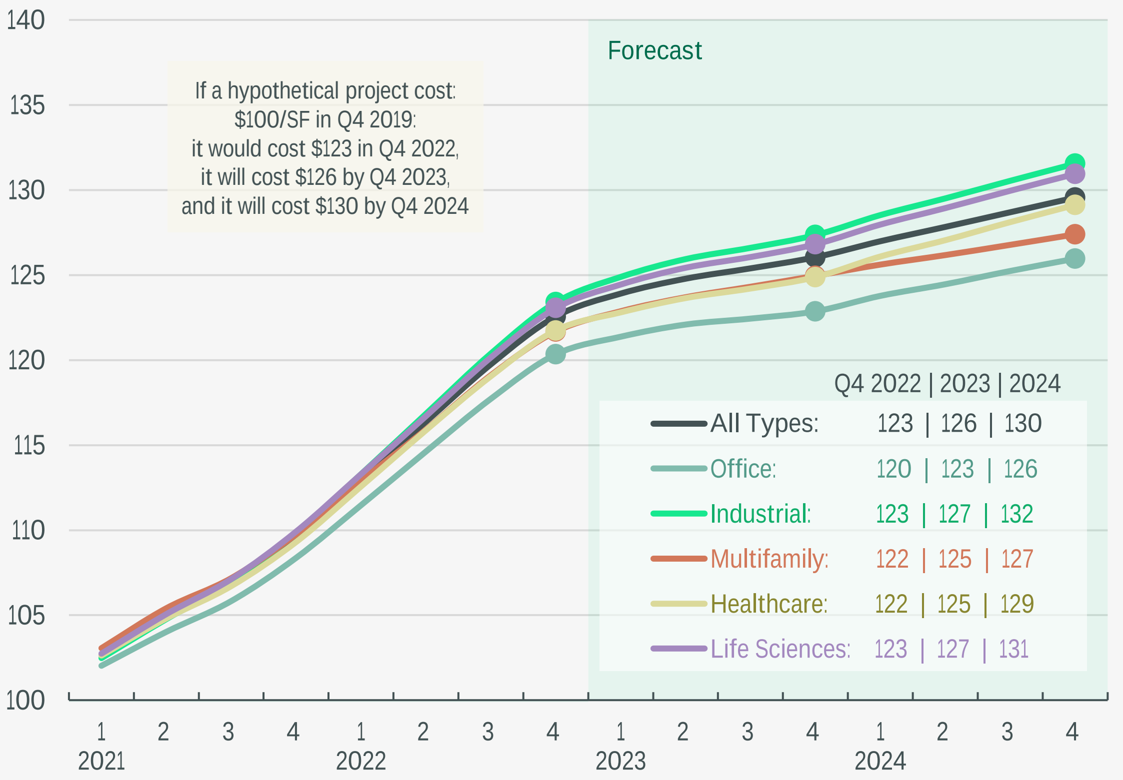
Construction activity in San Francisco has been slower than most markets since the onset of COVID-19, which has resulted in much slower cost growth than other markets. As of year-end 2022, 3.3% of the San Francisco inventory is under construction, which is about the pace of construction before the pandemic (2015-2019). While this is not especially low, most markets are 1.5x-3x their pace of construction before the pandemic.

Through most of 2019 and 2020, office construction was driving much of the activity, but a lack of new starts combined with major deliveries over the past two years has brought office construction to its lowest volume since 2013. A few large office projects have broken ground in recent months, including Building 1 at Southline (345,000 sq. ft.) in South Francisco and 30 Van Ness (235,000 sq. ft.) in Mid-Market.

San Francisco is a premier life sciences market and development activity is strong. Projects are a mix of office, R&D and flex property types, which helps explain the rise in industrial construction activity in recent months. Phase II of Kilroy Oyster Point is expected to be complete later in 2023, which will add ±865,000 sq. ft. of mixed R&D and lab across three buildings. The entire project is to be developed across five total phases and will add 1.5-2 million sq. ft. of office, R&D and lab space to the South San Francisco waterfront, in addition to the ±1.5 million sq. ft. already delivered or underway. In terms of recent starts, Longfellow Real Estate broke ground on a 315,000-sq.-ft. flex/lab facility in Millbrae in Q4 2022 and the project is expected to deliver late 2025.

Multifamily activity spiked in early 2022 before leveling off later in the year, but development is expected to stay elevated in 2023. Many of the largest projects are not expected to deliver until 2024 or later, and high-rise projects like Related California's 98 Franklin St. are expected to break ground some time in 2023.

TCC/CBRE New Building Cost Index (NBCI) by Property Type (2019 Q4 = 100)



Source: Bureau of Labor Statistics, Bureau of Economic Analysis, CoStar Group, Oxford Economics, CBRE Strategic Investment Consulting, Q1 2023.

GC expectations for the next 3 months:

- ▲ Lead times for openings, equipment, HVAC, electrical and large generators are expected to lengthen
- ▲ A shortage is expected for switchgear, generators and all-electric plant equipment
- ▼ Materials cost inflation for openings and HVAC will slow from last quarter
- ▶ Materials cost inflation for other categories will resemble recent growth
- ▶ Labor costs will rise but at virtually the same pace as last quarter
- ▲ Under Construction Sq. Ft. will pick up as starts exceed deliveries in Q1

Return to Directory

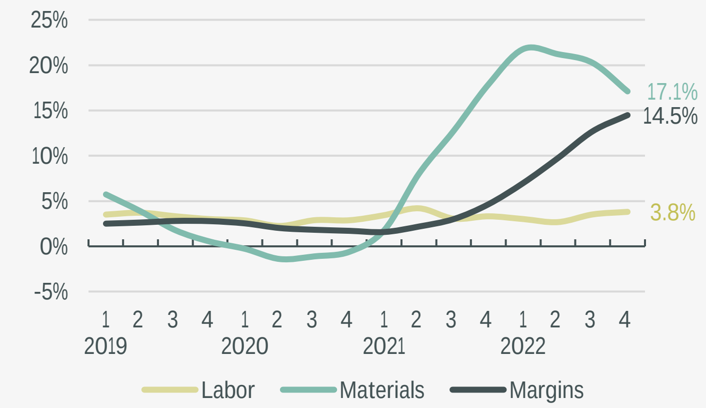
San Francisco

CONSTRUCTION COST BREAKDOWN

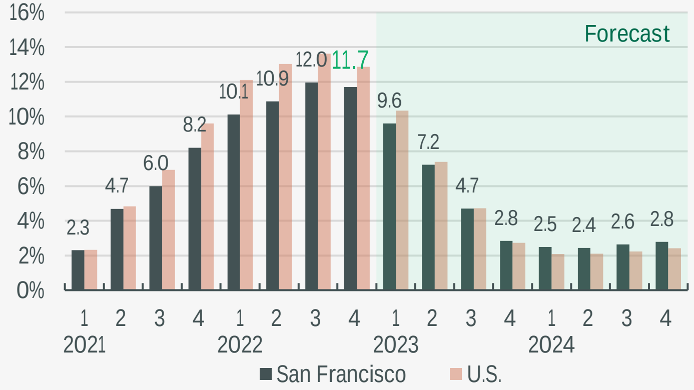
Interpret the charts below:
In Q4 2022, total new building costs increased by 11.7% since Q4 2021.
Labor costs grew by 3.8%, Materials by 17.1%, and Margins by 14.5% over the same period.

Example for using the table below:
If a new office project in San Francisco cost $200/SF in Q4 2022, then it is expected to cost $203.49/SF in Q3 2023, a 1.7% total increase.

Cost Growth (Year-over-Year %) By Cost Component



NBCI Growth (Year-over-Year %) – Market vs. U.S.

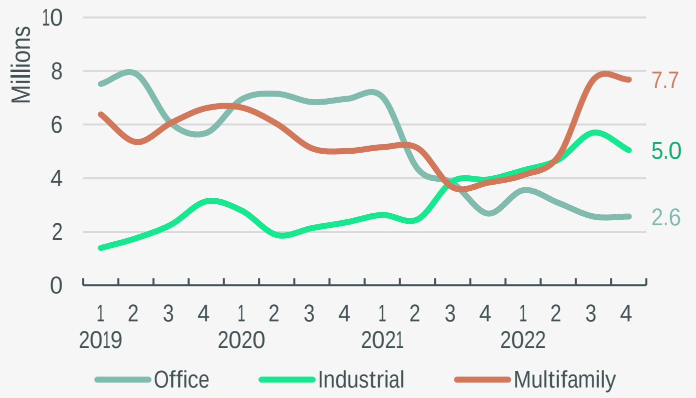


Forecasted NBCI Growth by Property Type – Next 2 Years

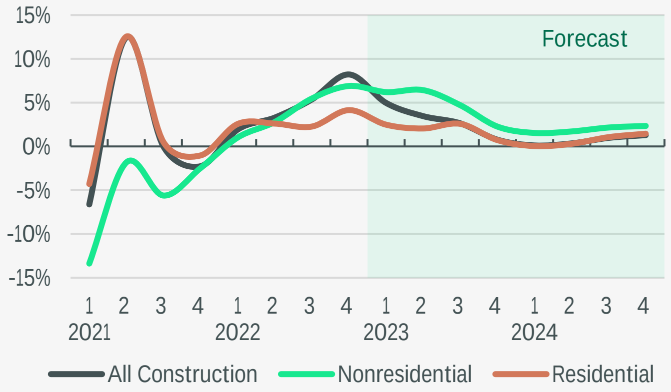
	Cumulative % Change from Q4 2022							
Property Type	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024
Office	0.9%	1.5%	1.7%	2.1%	2.9%	3.4%	4.1%	4.7%
Industrial	1.2%	2.1%	2.6%	3.2%	4.2%	5.0%	5.8%	6.6%
Multifamily	1.0%	1.7%	2.2%	2.7%	3.2%	3.7%	4.2%	4.7%
Healthcare	0.9%	1.6%	2.0%	2.6%	3.6%	4.4%	5.2%	6.1%
Life Sciences	1.1%	1.9%	2.4%	3.1%	4.0%	4.8%	5.6%	6.4%
Total Market	1.1%	1.8%	2.3%	2.8%	3.6%	4.3%	5.0%	5.7%
U.S. Average	1.2%	1.8%	2.3%	2.7%	3.3%	3.9%	4.6%	5.2%

KEY LOCAL MARKET FACTORS

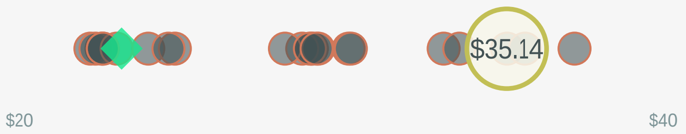
Sq. Ft. Under Construction by Property Type



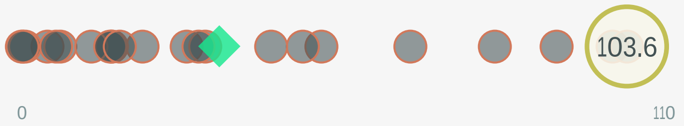
Job Growth (Year-over-Year %) by Subsector



Median Hourly Wage - Construction Occupations



Active Construction Apprenticeships per 1,000 Workers



◆ = U.S. Average ○ = San Francisco ● = Other TCC Markets

Note: Life Sciences under construction is included in office or industrial (depending on primary use type)

Sources: Oxford Economics, Costar Group, Bureau of Economic Analysis, Bureau of Labor Statistics, Department of Labor, CBRE Strategic Investment Consulting, Q4 2022

San Jose

11.7% Cost Growth – Last 12 Months
% Change in NBCI Q4 2021-Q4 2022
Rank #21, U.S. = 12.9%

2.8% Cost Growth – Next 12 Months
% Change in NBCI Q4 2022-Q4 2023
Rank #17, U.S. = 2.7%

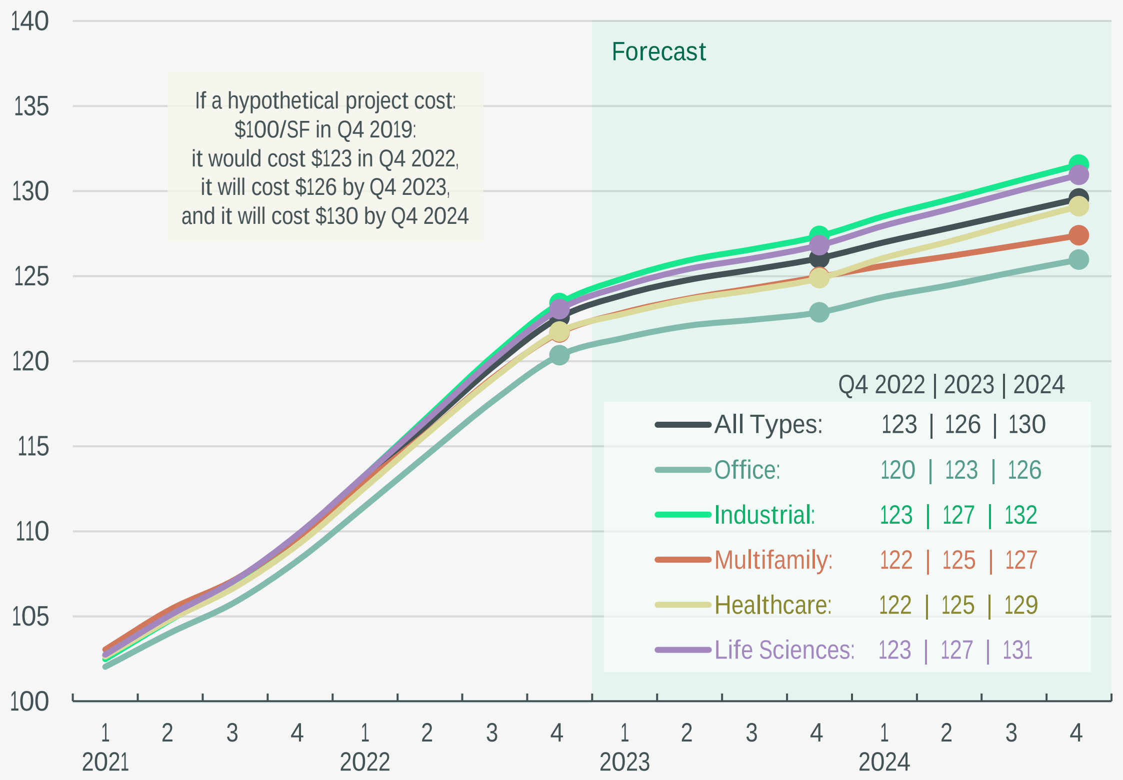
4.4% % of NRA Under Construction
As of Q4 2022
Rank #9, U.S. = 3.5%

San Jose has had weaker cost growth than most markets in the past few years, but this is in large part due to the consistency of activity over a long period of time. In other words, there was no spike in activity since the level stayed virtually the same from 2015 through the first half of 2022. Construction began accelerating in the second half of 2022, which also increased the demand for labor and led to a jump in wages. Wage growth in San Jose was higher than any market in this report at the end of 2022, but this was also in part because wage growth had been much lower early in the pandemic.

The spike in activity was driven by multifamily development, with four of the five largest active projects breaking ground in the second half of 2022. The largest active project is Gateway Crossings in Santa Clara which broke ground in July 2022. The 1.7-million-sq.-ft. development will add 1,565 units across four buildings, which are set to be completed in 2025. There are four 1,000-unit+ projects in the pipeline for which the date of groundbreaking is uncertain, but if development begins in 2023 would push activity substantially. The largest is Google's Mega Campus plan, which would add 4,000 units as well as 7.3 million sq. ft. of office and 500,000 sq. ft. of mixed-commercial space in Downtown San Jose. In March 2023, the company announced it was reassessing the timeline of the project.

Office development has been consistent in San Jose, unlike many other markets in this report. The largest office project underway—Jay Paul's 937,000-sq.-ft. 200 Park building in Downtown San Jose—is set to deliver in Summer 2023. Office development should stay relatively high throughout 2023 though, as several projects are in the final planning stages. The largest project expected to break ground is The Related Companies' Related Santa Clara Phase II, which would add 1.1 million sq. ft. to the campus. If all six phases are eventually developed as planned, it would add nearly six million sq. ft. of office to the market.

TCC/CBRE New Building Cost Index (NBCI) by Property Type (2019 Q4 = 100)



Source: Bureau of Labor Statistics, Bureau of Economic Analysis, CoStar Group, Oxford Economics, CBRE Strategic Investment Consulting, Q1 2023.

GC expectations for the next 3 months:

- ▲ Lead times for equipment, HVAC and electrical are expected to lengthen
- ▲ A shortage is expected for electrical and thermal/moisture protection
- ▲ Concrete cost inflation will accelerate slightly
- ▼ Materials cost inflation for other categories will slow by 50-150 bps
- ▶ Labor costs will rise but at virtually the same pace as last quarter
- ▶ Under Construction Sq. Ft. will be virtually the same as last quarter with few starts or deliveries

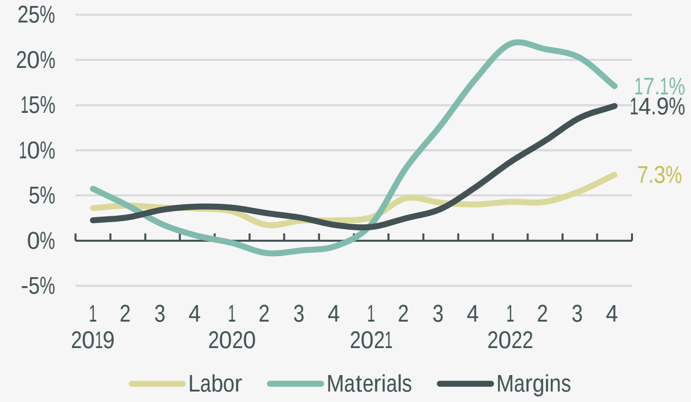
San Jose

CONSTRUCTION COST BREAKDOWN

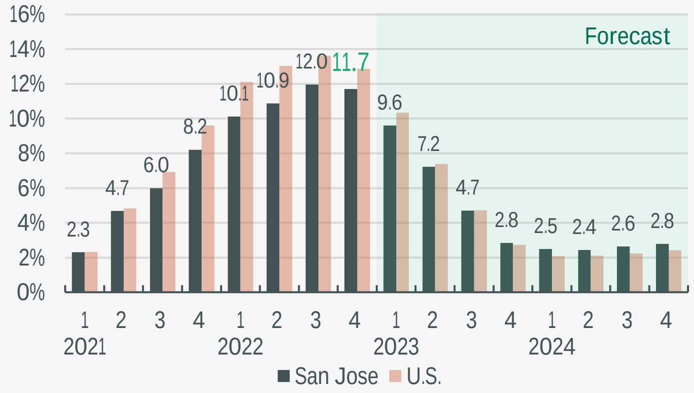
Interpret the charts below:
In Q4 2022, total new building costs increased by 11.7% since Q4 2021.
Labor costs grew by 7.3%, Materials by 17.1%, and Margins by 14.9% over the same period.

Example for using the table below:
If a new office project in San Jose cost $200/SF in Q4 2022,
then it is expected to cost $203.49/SF in Q3 2023, a 1.7% total increase.

Cost Growth (Year-over-Year %) By Cost Component



NBCI Growth (Year-over-Year %) – Market vs. U.S.

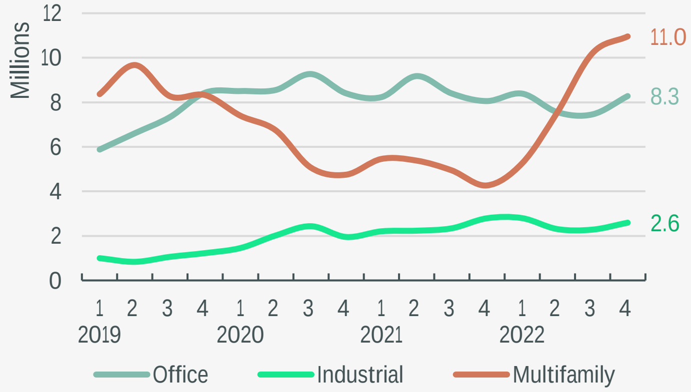


Forecasted NBCI Growth by Property Type – Next 2 Years

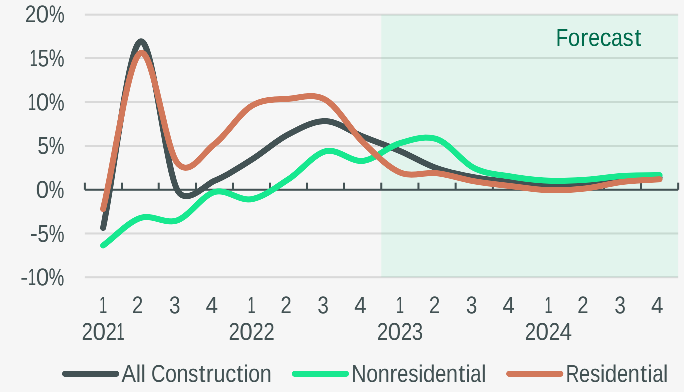
	Cumulative % Change from Q4 2022							
Property Type	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024
Office	0.9%	1.5%	1.7%	2.1%	2.9%	3.4%	4.1%	4.7%
Industrial	1.2%	2.1%	2.6%	3.2%	4.2%	5.0%	5.8%	6.6%
Multifamily	1.0%	1.7%	2.2%	2.7%	3.2%	3.7%	4.2%	4.7%
Healthcare	0.9%	1.6%	2.0%	2.6%	3.6%	4.4%	5.2%	6.1%
Life Sciences	1.1%	1.9%	2.4%	3.1%	4.0%	4.8%	5.6%	6.4%
Total Market	1.1%	1.8%	2.3%	2.8%	3.6%	4.3%	5.0%	5.7%
U.S. Average	1.2%	1.8%	2.3%	2.7%	3.3%	3.9%	4.6%	5.2%

KEY LOCAL MARKET FACTORS

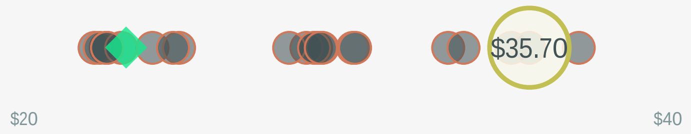
Sq. Ft. Under Construction by Property Type



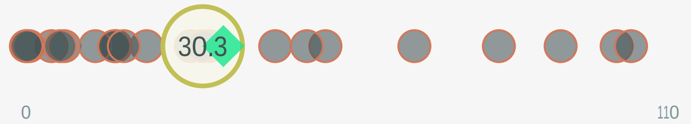
Job Growth (Year-over-Year %) by Subsector



Median Hourly Wage - Construction Occupations



Active Construction Apprenticeships per 1,000 Workers



◆ = U.S. Average ○ = San Jose ● = Other TCC Markets

Note: Life Sciences under construction is included in office or industrial (depending on primary use type)

Sources: Oxford Economics, Costar Group, Bureau of Economic Analysis, Bureau of Labor Statistics, Department of Labor, CBRE Strategic Investment Consulting, Q4 2022

Seattle

12.2% Cost Growth – Last 12 Months
% Change in NBCI Q4 2021-Q4 2022
Rank #17, U.S. = 12.9%

2.9% Cost Growth – Next 12 Months
% Change in NBCI Q4 2022-Q4 2023
Rank #16, U.S. = 2.7%

5.7% % of NRA Under Construction
As of Q4 2022
Rank #4, U.S. = 3.5%

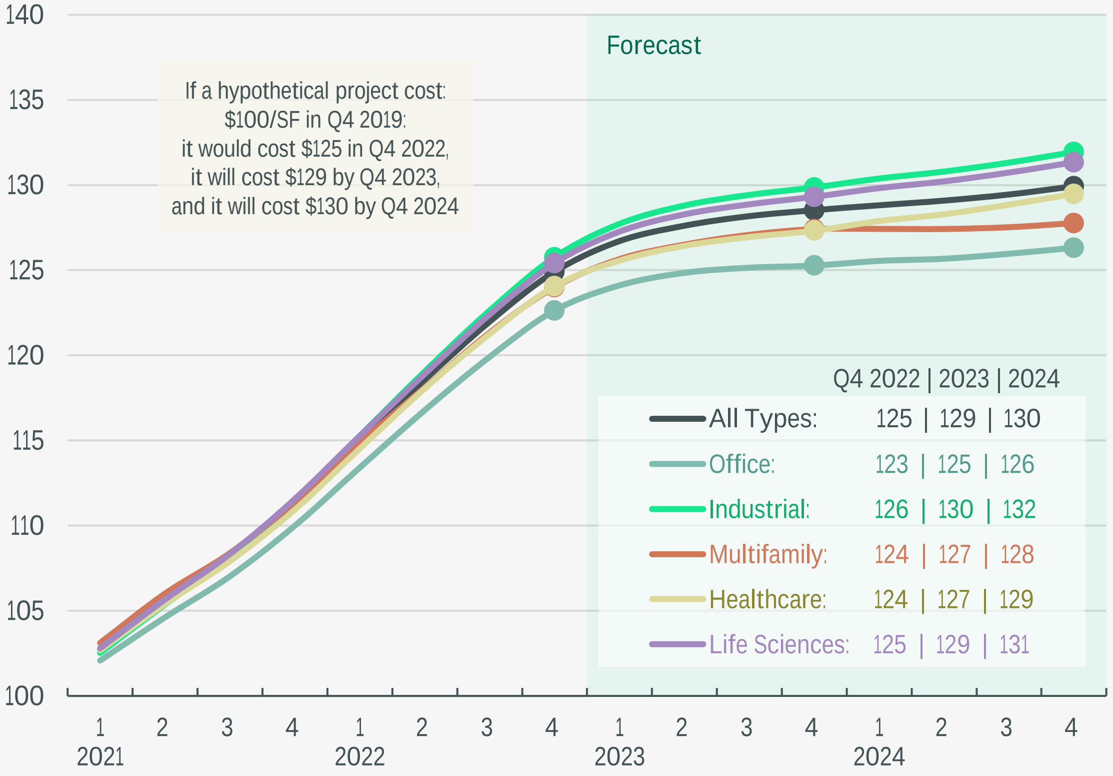
Seattle is one of the most active construction markets in the U.S. and has been since 2015. Activity accelerated in 2022, but it did not spike (relative to its history) like other markets that experienced higher NBCI growth. This relative consistency has kept margins from growing too rapidly, This trend, combined with relatively low labor cost growth, has kept the NBCI growth rate lower than the U.S. average, but the NBCI is expected to outpace the U.S. in 2023 as development slows in other markets.

The large and growing tech presence in Seattle has driven consistently high office development for several years, and only Boston has more office product under construction as of year-end 2022. The largest active project is Microsoft's massive 2.5-million-sq.-ft. Redmond Campus modernization project, which broke ground in 2021 and is expected to take until at least 2025 to complete. Vulcan has two large office buildings set to deliver in 2023. Both buildings are ±1 million sq. ft. in the Bellevue CBD and pre-leased by Amazon.

Downtown Bellevue has been the site of significant growth in Seattle and is expected to be where much of the new office construction will take place. CBRE EA expects more than 4 million sq. ft. of office will deliver in the Bellevue CBD submarket in 2023 and 2024. which is more than any other Seattle submarket and about 60% of their forecast deliveries in the market.

Seattle is a growing life sciences market and several major developments are underway. TCC broke ground on 1916 Boren in late 2022, which will add 321,000 sq. ft. of office/life sciences in the middle of the Seattle CBD and South Lake Union submarkets. ARE is underway on two projects in Lake Union. Eleven 50 is the larger of the two at 312,000 sq. ft., while 701 Dexter Ave N will add 267,000 sq. ft.

TCC/CBRE New Building Cost Index (NBCI) by Property Type (2019 Q4 = 100)



	Q4 2022 | 2023 | 2024
All Types:	125 | 129 | 130
Office:	123 | 125 | 126
Industrial:	126 | 130 | 132
Multifamily:	124 | 127 | 128
Healthcare:	124 | 127 | 129
Life Sciences:	125 | 129 | 131

Source: Bureau of Labor Statistics, Bureau of Economic Analysis, CoStar Group, Oxford Economics, CBRE Strategic Investment Consulting, Q1 2023.

GC expectations for the next 3 months:

- ▲ Lead times for wood/ plastics, lab equipment and construction machinery are expected to lengthen
- ▲ A shortage is expected for woods/plastics, data cabling, electrical gear and circuit-board components
- ▼ Materials cost inflation for concrete, openings and equipment will slow most notably from last quarter
- ▶ Materials cost inflation for other categories will resemble recent growth
- ▶ Labor costs will rise but at virtually the same pace as last quarter
- ▼ Under Construction Sq. Ft. will slow after several large projects deliver in early 2023

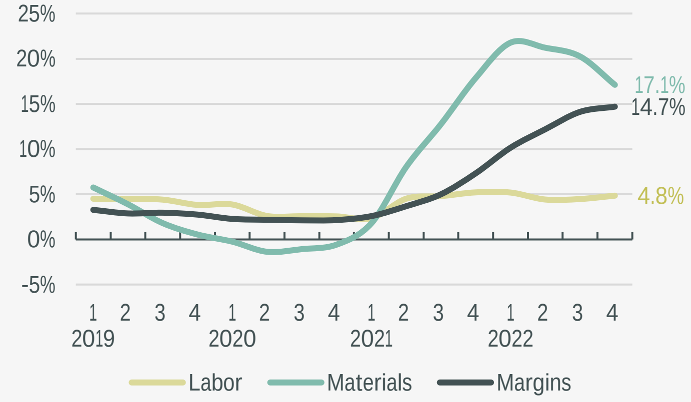
Seattle

CONSTRUCTION COST BREAKDOWN

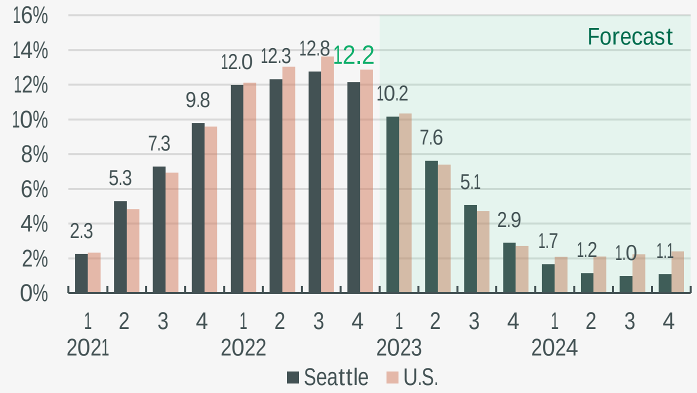
Interpret the charts below:
In Q4 2022, total new building costs increased by 12.2% since Q4 2021.
Labor costs grew by 4.8%, Materials by 17.1%, and Margins by 14.7% over the same period.

Example for using the table below:
If a new office project in Seattle cost $200/SF in Q4 2022,
then it is expected to cost $204.10/SF in Q3 2023, a 2.1% total increase.

Cost Growth (Year-over-Year %) By Cost Component



NBCI Growth (Year-over-Year %) – Market vs. U.S.

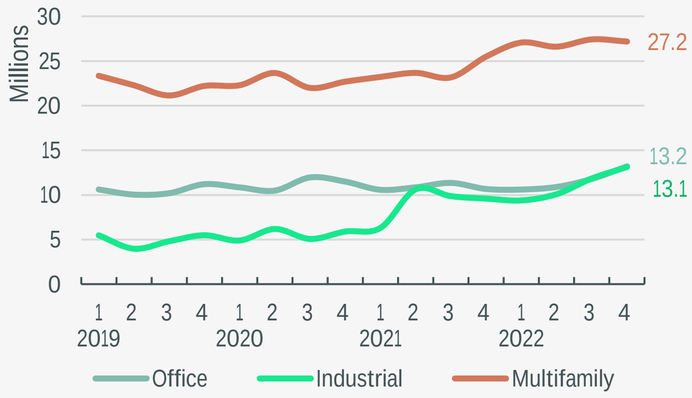


Forecasted NBCI Growth by Property Type – Next 2 Years

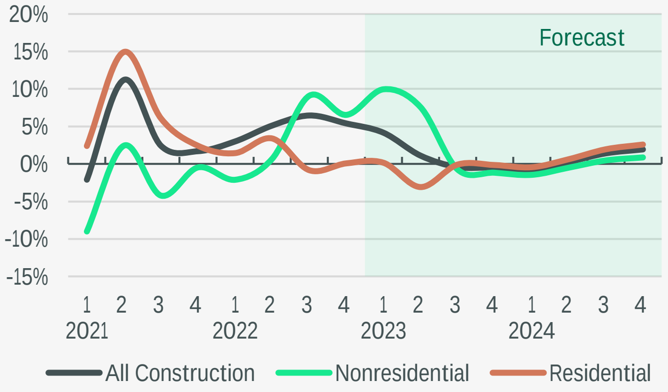
Property Type	Cumulative % Change from Q4 2022 Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024
Office	1.2%	1.8%	2.1%	2.2%	2.4%	2.5%	2.7%	3.0%
Industrial	1.6%	2.4%	2.9%	3.3%	3.7%	4.0%	4.4%	4.9%
Multifamily	1.3%	2.0%	2.5%	2.7%	2.8%	2.8%	2.8%	3.0%
Healthcare	1.2%	1.9%	2.3%	2.6%	3.1%	3.4%	3.9%	4.4%
Life Sciences	1.5%	2.3%	2.8%	3.1%	3.5%	3.8%	4.2%	4.7%
Total Market	1.4%	2.2%	2.6%	2.9%	3.1%	3.3%	3.6%	4.0%
U.S. Average	1.2%	1.8%	2.3%	2.7%	3.3%	3.9%	4.6%	5.2%

KEY LOCAL MARKET FACTORS

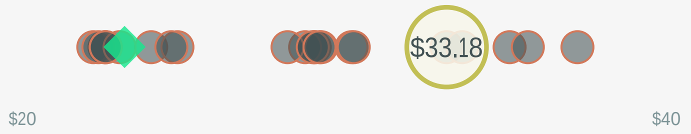
Sq. Ft. Under Construction by Property Type



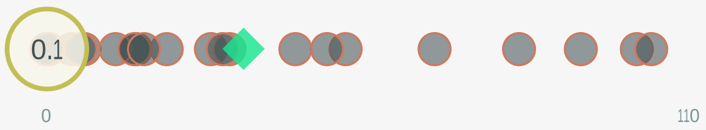
Job Growth (Year-over-Year %) by Subsector



Median Hourly Wage - Construction Occupations



Active Construction Apprenticeships per 1,000 Workers



◆ = U.S. Average ○ = Seattle ● = Other TCC Markets

Note: Life Sciences under construction is included in office or industrial (depending on primary use type)

Sources: Oxford Economics, Costar Group, Bureau of Economic Analysis, Bureau of Labor Statistics, Department of Labor, CBRE Strategic Investment Consulting, Q4 2022

St. Louis

12.2% Cost Growth – Last 12 Months
% Change in NBCI Q4 2021-Q4 2022
Rank #15, U.S. = 12.9%

2.3% Cost Growth – Next 12 Months
% Change in NBCI Q4 2022-Q4 2023
Rank #21, U.S. = 2.7%

1.6% % of NRA Under Construction
As of Q4 2022
Rank #21, U.S. = 3.5%

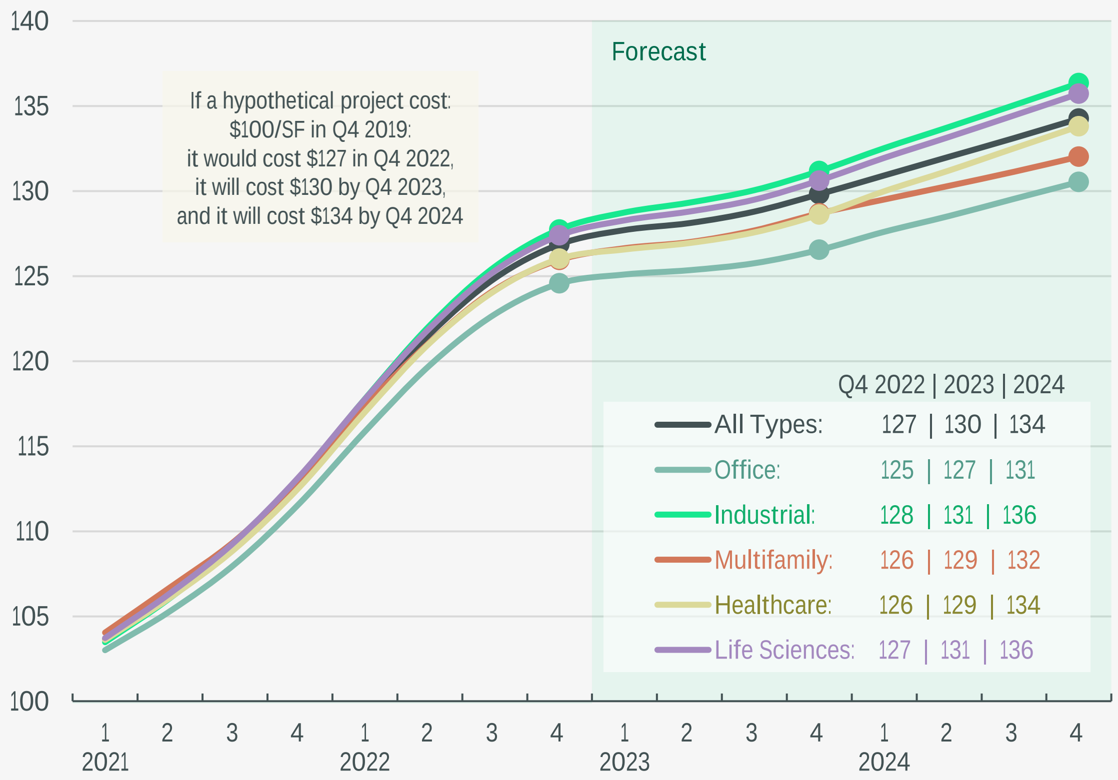
St. Louis has been one of the least active commercial construction markets in this report, which has led to slower-than-average cost growth. The market did see a major spike in late 2021-early 2022 which drove up cost growth well above the U.S. average, but the two largest projects delivered in 2022 and brought construction levels back down. Hazelwood Business Park (1.3-million-sq.-ft. warehouse) and Gateway TradePort 4 (1-million-sq.-ft. distribution) delivered in the second half of 2022 and were the only one-million-sq.-ft.+ projects underway.

Some large projects remain underway, including a 775,000-sq.-ft. industrial building that broke ground in Wright City in Q4 2022. The National Geospatial-Intelligence Agency is also building a 712,000-sq.-ft. office headquarters northwest of Downtown St. Louis and is expected to be under construction into 2024.

Multifamily construction has been more consistent in St. Louis with 23 projects underway with 100 or more units. The largest active project is The Victor in Downtown West St. Louis, which will add 342 units and 19,000 sq. ft. of retail. Local developer John Clancy is expected to break ground on what will be the largest active multifamily project in St. Louis when started. The five-building, 333-unit complex is called The SOGRO in the Bevo Mill submarket and is expected to break ground in summer 2023.

Though not related to the property types in this report, a major hospitality project is expected to begin in summer 2023. The Oasis at Lakeport will be a $350-million resort, hotel and amusement park on the waterfront and will include a 400-room Marriott hotel, an indoor water park and other recreational and amusement amenities. The amusement park is set to open in 2024, but the hotel and indoor water park are expected in 2026, according to developers SkyView Partners and Tegethoff Development.

TCC/CBRE New Building Cost Index (NBCI) by Property Type (2019 Q4 = 100)



Source: Bureau of Labor Statistics, Bureau of Economic Analysis, CoStar Group, Oxford Economics, CBRE Strategic Investment Consulting, Q1 2023.

GC expectations for the next 3 months:

- ▲ Lead times for concrete, plumbing, HVAC and electrical are expected to lengthen
- ▲ A shortage is expected for the materials above as well as for thermal & moisture protection
- ▼ Materials cost inflation for steel & metals will continue falling
- ▼ Materials cost inflation for concrete, finishes, HVAC and electrical should ease
- ► Labor costs will rise but at virtually the same pace as last quarter
- ▼ Under Construction Sq. Ft. will continue to slow with few starts expected

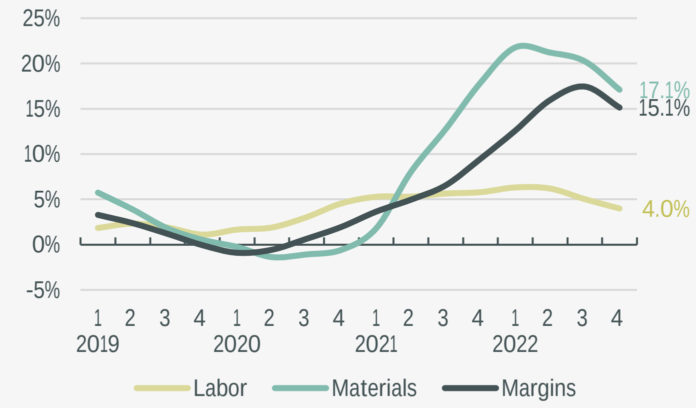
St. Louis

CONSTRUCTION COST BREAKDOWN

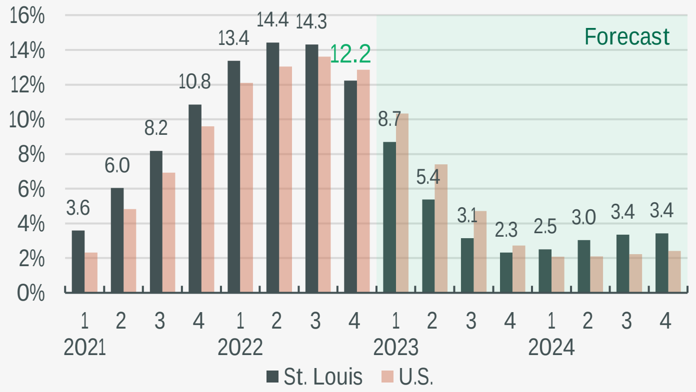
Interpret the charts below:
In Q4 2022, total new building costs increased by 12.2% since Q4 2021.
Labor costs grew by 4.0%, Materials by 17.1%, and Margins by 15.1% over the same period.

Example for using the table below:
If a new office project in St. Louis cost $200/SF in Q4 2022,
then it is expected to cost $201.91/SF in Q3 2023, a 1.0% total increase.

Cost Growth (Year-over-Year %) By Cost Component



NBCI Growth (Year-over-Year %) – Market vs. U.S.

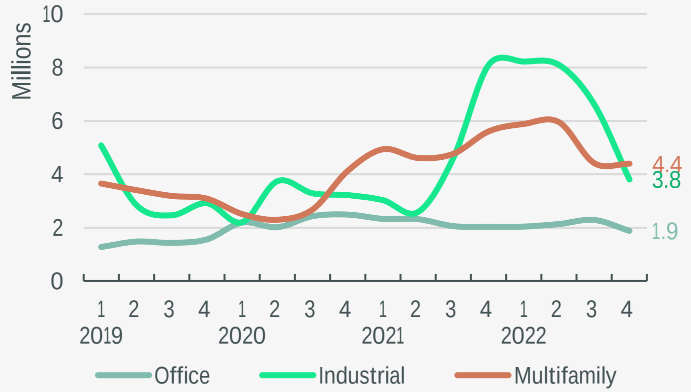


Forecasted NBCI Growth by Property Type – Next 2 Years

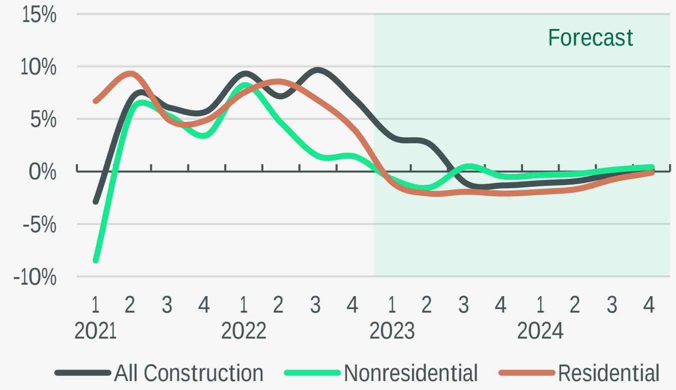
Property Type	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024
	Cumulative % Change from Q4 2022							
Office	0.4%	0.6%	1.0%	1.6%	2.4%	3.2%	4.0%	4.8%
Industrial	0.8%	1.2%	1.8%	2.7%	3.7%	4.7%	5.7%	6.7%
Multifamily	0.5%	0.8%	1.4%	2.2%	2.8%	3.5%	4.1%	4.8%
Healthcare	0.4%	0.7%	1.2%	2.1%	3.1%	4.1%	5.2%	6.2%
Life Sciences	0.7%	1.1%	1.7%	2.5%	3.6%	4.5%	5.5%	6.5%
Total Market	0.7%	1.0%	1.5%	2.3%	3.2%	4.1%	4.9%	5.8%
U.S. Average	1.2%	1.8%	2.3%	2.7%	3.3%	3.9%	4.6%	5.2%

KEY LOCAL MARKET FACTORS

Sq. Ft. Under Construction by Property Type

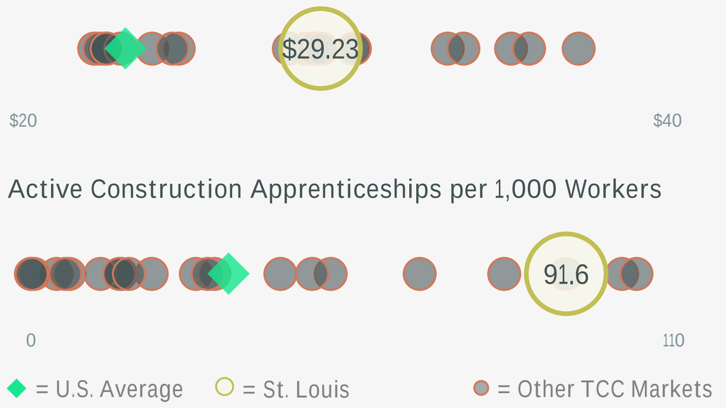


Job Growth (Year-over-Year %) by Subsector



Median Hourly Wage - Construction Occupations

Active Construction Apprenticeships per 1,000 Workers



Note: Life Sciences under construction is included in office or industrial (depending on primary use type)

Sources: Oxford Economics, Costar Group, Bureau of Economic Analysis, Bureau of Labor Statistics, Department of Labor, CBRE Strategic Investment Consulting, Q4 2022

Washington, D.C.

12.8% Cost Growth – Last 12 Months
% Change in NBCI Q4 2021-Q4 2022
Rank #7, U.S. = 12.9%

2.1% Cost Growth – Next 12 Months
% Change in NBCI Q4 2022-Q4 2023
Rank #23, U.S. = 2.7%

3.8% % of NRA Under Construction
As of Q4 2022
Rank #11, U.S. = 3.5%

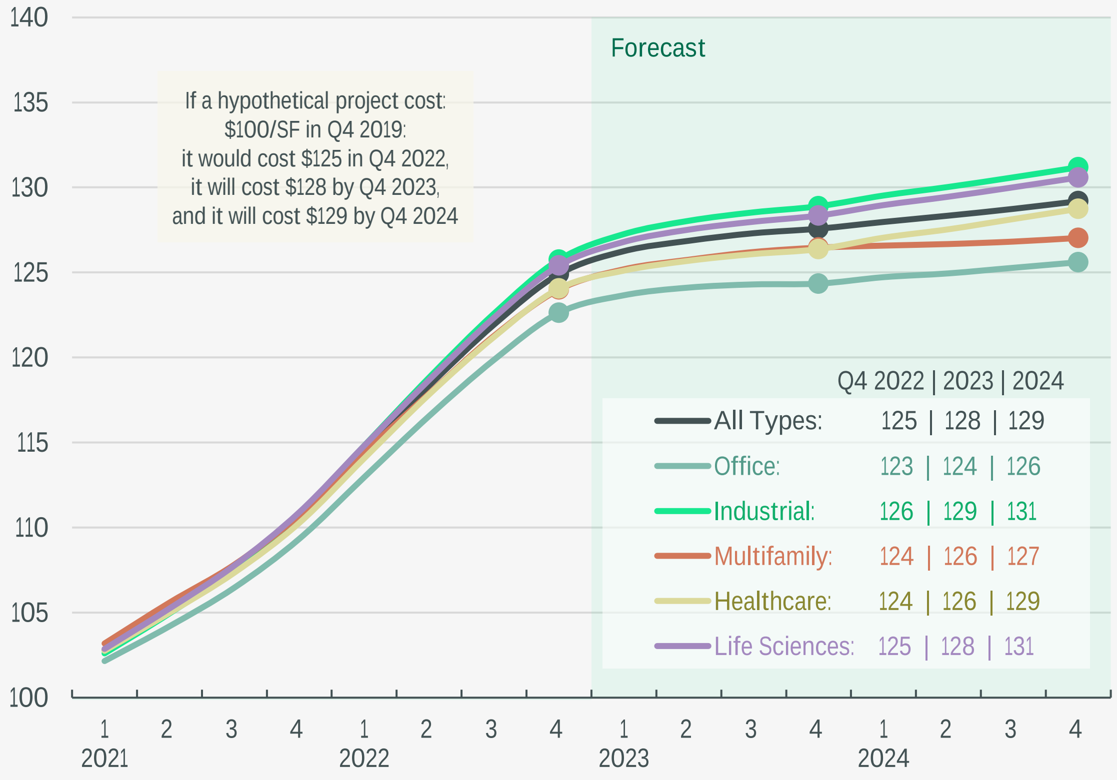
D.C. is a unique market, crossing multiple state and local jurisdiction, and the presence of the federal government leads to more publicly-financed construction and GSA projects. In addition, it is one of the nation's leading technology markets and has a strong life sciences cluster. This has led to steady activity over long periods, making the market slightly less susceptible to demand spikes.

Over the past five years, office construction has been slowing steadily while industrial construction has ramped up. While the market has had some smaller infill warehouse and distribution projects to meet demand in recent years, most of the large industrial projects have been R&D and manufacturing facilities to accommodate the local defense and life sciences sectors. Flex telecom/data center spaces have also been growing substantially in the market in recent years, mostly in Northern Virginia.

A major headline in early 2023 has been the pause of Amazon's construction on HQ2 in Arlington. The company still plans to open the 2.1-million-sq.-ft. phase I portion (set to deliver summer 2023), but phase II is on hold. The 2.8-million-sq.-ft. project was supposed to break ground in Q1 2023. The company has indicated it intends to move forward in the future but for now is pushing the construction into the future. Besides HQ2, the largest office project underway is the 850,000-sq.-ft. Capital One Center in Tysons Corner which is set to deliver in late 2023/early 2024.

TCC recently received site plan approval for a large-scale life sciences campus in Rockville on Johns Hopkins' Belward Campus. The entire site could accommodate up to 4.7 million sq. ft. of mixed commercial uses, but the initial plan calls for three life sciences facilities that would total 756,000 sq. ft.

TCC/CBRE New Building Cost Index (NBCI) by Property Type (2019 Q4 = 100)



Source: Bureau of Labor Statistics, Bureau of Economic Analysis, CoStar Group, Oxford Economics, CBRE Strategic Investment Consulting, Q1 2023.

GC expectations for the next 3 months:

- ▲ Lead times for equipment and electrical are expected to lenghten
- ▶ Lead times for other key materials will remain like recent months
- ▼ Materials cost inflation for concrete, finishes and electrical will slow
- ▶ Materials cost inflation for other categories will be flat or similar to recent growth
- ▶ Labor costs will rise but at virtually the same pace as last quarter
- ▲ Under Construction Sq. Ft. will pick up as starts exceed deliveries in Q1

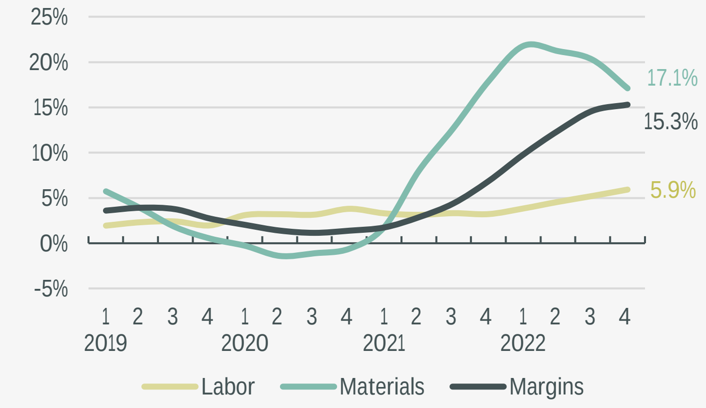
Washington, D.C.

CONSTRUCTION COST BREAKDOWN

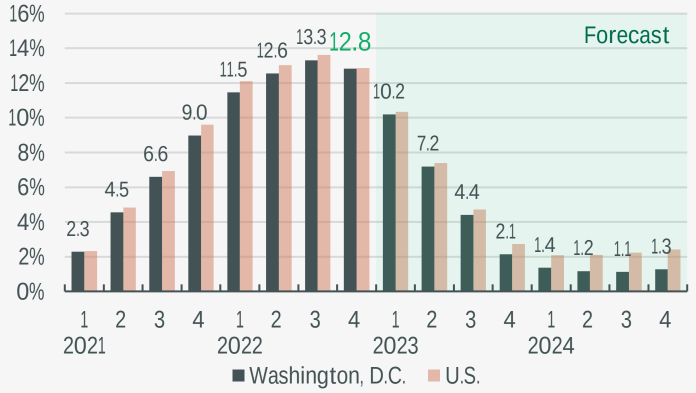
Interpret the charts below:
In Q4 2022, total new building costs increased by 12.8% since Q4 2021.
Labor costs grew by 5.9%, Materials by 17.1%, and Margins by 15.3% over the same period.

Example for using the table below:
If a new office project in Washington, D.C. cost $200/SF in Q4 2022,
then it is expected to cost $202.72/SF in Q3 2023, a 1.4% total increase.

Cost Growth (Year-over-Year %) By Cost Component



NBCI Growth (Year-over-Year %) – Market vs. U.S.

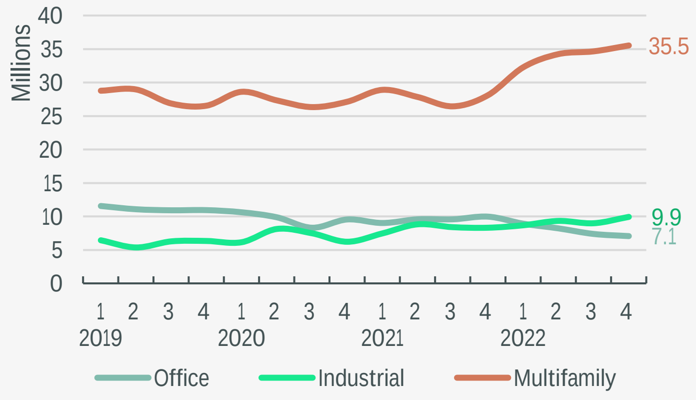


Forecasted NBCI Growth by Property Type – Next 2 Years

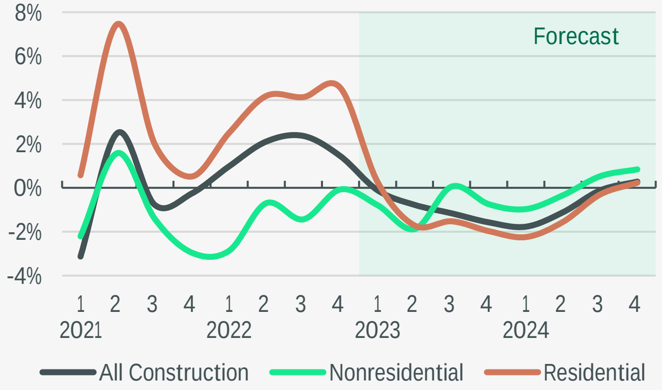
	Cumulative % Change from Q4 2022							
Property Type	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024	Q3 2024	Q4 2024
Office	0.8%	1.2%	1.4%	1.4%	1.7%	1.9%	2.2%	2.4%
Industrial	1.2%	1.8%	2.2%	2.5%	3.0%	3.4%	3.9%	4.3%
Multifamily	1.0%	1.4%	1.8%	2.0%	2.1%	2.2%	2.3%	2.4%
Healthcare	0.9%	1.3%	1.6%	1.9%	2.4%	2.8%	3.3%	3.8%
Life Sciences	1.1%	1.7%	2.1%	2.3%	2.8%	3.2%	3.7%	4.1%
Total Market	1.1%	1.6%	1.9%	2.1%	2.5%	2.8%	3.1%	3.4%
U.S. Average	1.2%	1.8%	2.3%	2.7%	3.3%	3.9%	4.6%	5.2%

KEY LOCAL MARKET FACTORS

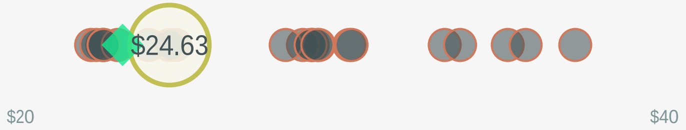
Sq. Ft. Under Construction by Property Type



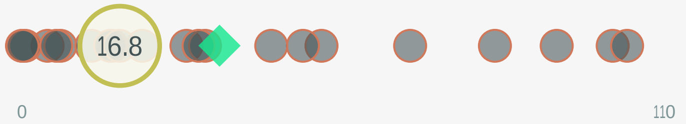
Job Growth (Year-over-Year %) by Subsector



Median Hourly Wage - Construction Occupations



Active Construction Apprenticeships per 1,000 Workers



◆ = U.S. Average ○ = Washington, D.C. ● = Other TCC Markets

Note: Life Sciences under construction is included in office or industrial (depending on primary use type)

Sources: Oxford Economics, Costar Group, Bureau of Economic Analysis, Bureau of Labor Statistics, Department of Labor, CBRE Strategic Investment Consulting, Q4 2022

Appendix

Glossary of Terms and Methods

Part 1: Construction Activity and Margins

CBRE Modeled Margins Index: An estimate of change in the margins component of construction costs. The metric combines standardized measures of the amount of space under construction with real private fixed investment (RPFI) to create an index score with Q4 2019 as the base (100). For each property type margins index, the amount of under construction SF for that product type is standardized and blended with RPFI (the same across property types). For each market, a sum of office, industrial and multifamily under construction SF in that is incorporated to estimate market-level variability. As activity and investment rises or falls (relative to the historic norm for the market or property type), the index gets higher or lower.

Margins: Margins represent the difference between the cost of providing construction-related goods and services and the bid price received (i.e. profit).

Real Private Fixed Investment (RPFI): Measures spending by private businesses, nonprofit institutions and households on fixed assets in the U.S. economy. For the NBCI model, RPFI in new structures (chain-type price index) is used.

Share of Inventory Actively Under Construction (% NRA Under Construction): The amount of under construction (sq. ft.) as a percentage of the current period's total stock.

Stock/Inventory/Net Rentable Area (NRA): Total amount of rentable sq. ft. (or units for multifamily) as of that period. Stock would not include abandoned properties or buildings that are otherwise unusable. In cases where multifamily sq. ft. is unavailable, the number of units is multiplied by 1,000 to scale to a sq. ft. estimate.

Under Construction, Starts & Completions: Under construction is the total amount of sq. ft. that is actively in the building process during a time period (including starts and buildings already underway). Starts are projects that began during that time period. Completions (or deliveries) are projects that are no longer under construction and now exist a part of the stock, starting in that time period.

Part 2: Materials and Equipment Costs

CBRE Modeled Materials Cost Index: An estimate of change in the materials component of construction costs. PPIs for net inputs to construction are used for each property type, then a weighted average is used for the all-property-type index. All measures are indexed to Q4 2019 (100). The same national index values are used for local market estimates, though each local market forecast is adjusted using regional ready-mix concrete PPIs and a local GDP deflator.

Inputs (Net Goods Inputs)/Outputs: Input prices measure the prices of products purchased for use in the production. Output prices measure the price of products as they are sold to the next stage in the production chain. In most cases, indexes and models are using the net goods inputs to isolate the cost of materials used in the building process.

Producer Price Index (PPI): A family of indexes that measures the average change over time in selling prices received by domestic producers of goods and services. PPIs measure price change from the perspective of the seller.

Part 3: Labor Force Dynamics

CBRE Modeled Labor Cost Index: An estimate of change in the labor component of construction costs. The most timely and consistent measure comes from the CES (see below for definition), which provides the average hourly wage for the construction industry nationally each month and is seasonally adjusted. Market-level estimates of CES wages are not produced, so local market estimates are produced using data from the QCEW (see below). Differences across markets are calculated over time and applied to the national CES estimate to produce current local market estimates for wage growth.

Employment and Wages: Multiple wage and employment sources and measures are used throughout the report, depending on the geography and unit of analysis. All are provided by the U.S. Bureau of Labor Statistics (BLS). The Current Employment Statistics (CES) series provides industry-level data by NAICS classification, and this series is used for average hourly wage estimates at the national level for construction and new building subsectors. The CES is also used for employment growth estimates at the market and national level. The Quarterly Census of Employment and Wages (QCEW) is also NAICS-based, but less timely and only provides average weekly wage estimates. Weekly wage estimates are useful, but can vary based on hours worked, so are less reflective of the per-unit wage cost. However, QCEW provides the only timely wage data available at the market level and is also forecast by Oxford economics, so QCEW figures are used to make comparisons across markets. In some cases, occupation data from the Occupation Employment and Wage Statistics (OES) is used to distinguish between different types of construction worker, based on their occupation rather than their industry.

Part 4: Implications for Construction Costs

TCC/CBRE New Building Cost Index (NBCI): A proprietary and custom measure of the change in total cost of new commercial buildings (including multifamily) to the developer. The NBCI combines the equally-weighted Modeled Margins, Modeled Materials Cost and Modeled Labor Cost indexes to generate a historic series of new building cost changes. The NBCI is forecast using a multi-step error correction model (ECM), starting with the weighted historic NBCI series then factoring in historic and forecast estimates of material inputs (concrete, steel, lumber and crude oil), construction value-add, the World Commodity Price Index, and the GDP-deflator. Markets and property types naturally vary based on the differences in history (due to how each modeled index is constructed), but forecasts are also varied based on market-level GDP deflator and regional concrete price estimates.

Other/General:

Active Construction Apprenticeships per 1,000 Workers: The Department of Labor tracks apprentice counts for all programs in the Registered Apprenticeship Partners Information Database System (RAPIDS) by industry and county. Construction industry counts by county are aggregated into their appropriate MSA and then divided by the number of construction workers (according the OES) and multiplied by 1,000. This data may exclude programs that are not reported to RAPIDS.

Markets: In most cases, markets are based on standard metropolitan statistical area (MSA) definitions as defined by the United States Office of Management and Budget (OMB). The Los Angeles and Newport Beach markets are both in the Los Angeles-Long Beach-Anaheim MSA, so where possible, their respective Metropolitan Divisions are used, but if data is only available for the MSA, then the MSA value is applied to both markets.

TCC/CBRE Contractor Survey Results

Key Survey Findings

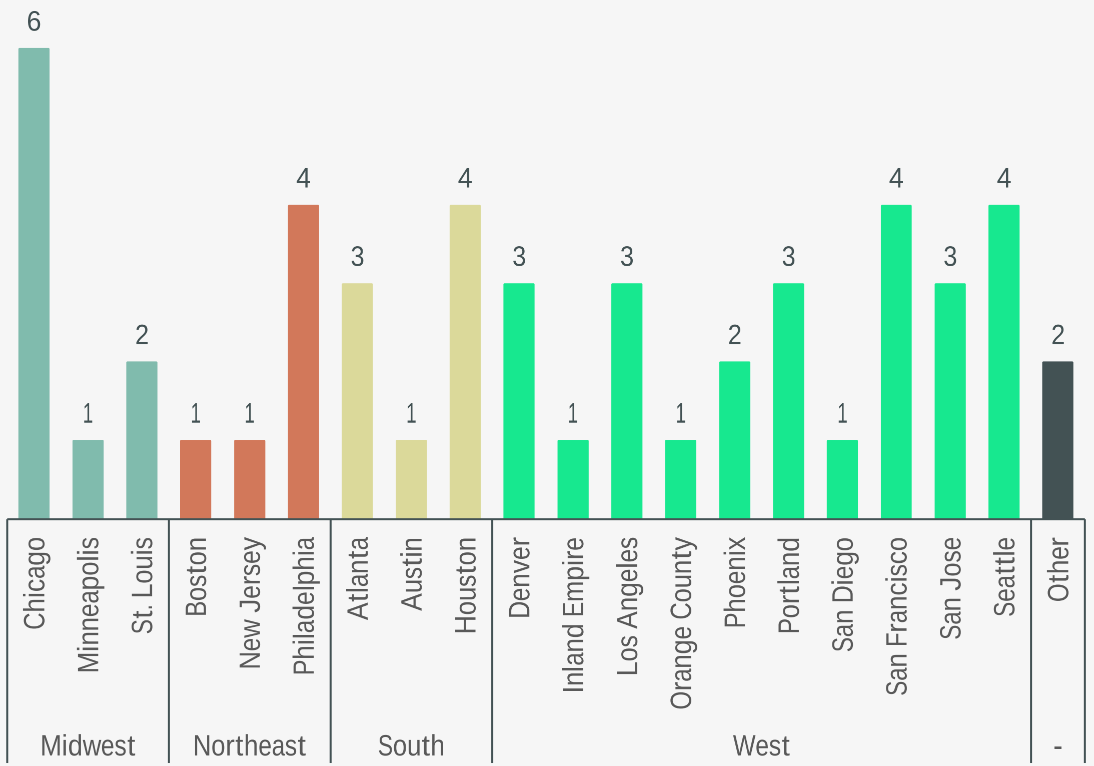
This report details the aggregated responses from a survey of general contractors conducted jointly by Trammell Crow Company (TCC) and CBRE. The survey was distributed primarily to contractors with whom TCC has active or recent partnerships and, by extension, was focused on TCC development markets. The survey was collected from Feb. 2nd to Mar. 6th 2023 and asked respondents about conditions over the prior three months and 12 months, as well as expectations for three and 12 months ahead. Approximately 50 contractors completed the survey, with nearly three-quarters of respondents answering for more than one property type.

The survey asked respondents directly about their estimates of construction cost levels and escalation rates, as well as questions related to each of the three major underlying cost components: activity & margins, materials & equipment, and labor. Key findings are highlighted in the table at right.

Business Impacts	Building Cost Trends	Materials and Equipment	Labor Force Dynamics
Builder demand appears to be slowing, which could lead to increased bid competition and lower margins than in recent months. Materials and equipment shortages are expected to improve as builder demand slows. Contractors are increasingly worried about their pipelines of new business, as well as the supply and quality of the tightening labor force. The financing environment is expected to worsen over the next quarter, meaning the cost of borrowing is likely to increase while the availability of capital is likely to shrink.	Life Sciences and Healthcare are the costliest to build (on a per sq. ft. basis) and cost estimates varied the most among respondents. Cost estimates for Industrial construction were generally aligned across respondents and costs varied less across regions than for other property types. Total development costs are expected to grow more slowly in all regions and across all property types over next 12 months (compared to the last 12 months. Cost escalation expectations are expected to be mostly uniform across property types.	Materials and equipment costs are expected to continue to increase over the next three months but at a slower pace than the past three months. Concrete and Electrical equipment costs have risen the most over the prior three months. Electrical, HVAC, and Equipment lead times are long and expected to lengthen or remain the same over the next three months. Most respondents reported shortages in Electrical, HVAC, Concrete and Equipment, but they expect shortages to ease somewhat in the next three months.	Rising wage pressures have contributed to increased labor costs for 92% of respondents. Only increases in shift differential pay was reported as having no impact on labor costs by a majority of respondents. The median increase in labor costs across all respondents over the past three months was 2.5%, but they expect costs to slow to 1.2% over the next three months. The skill and experience of available talent and new hires is a pain point for most contractors and more respondents expect the situation to worsen rather than improve in the coming months.

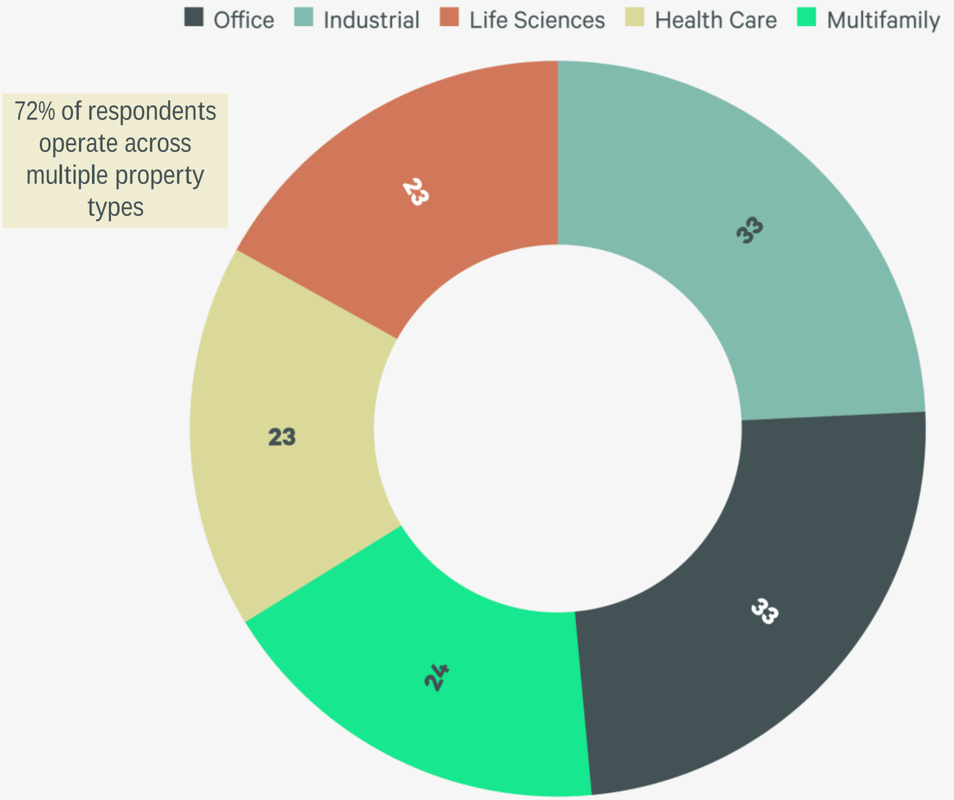
Respondent Profile

Number of Responses By Market and Region



Source: Various Contractors, CBRE Strategic Investment Consulting, March 2023

Responses By Property Type

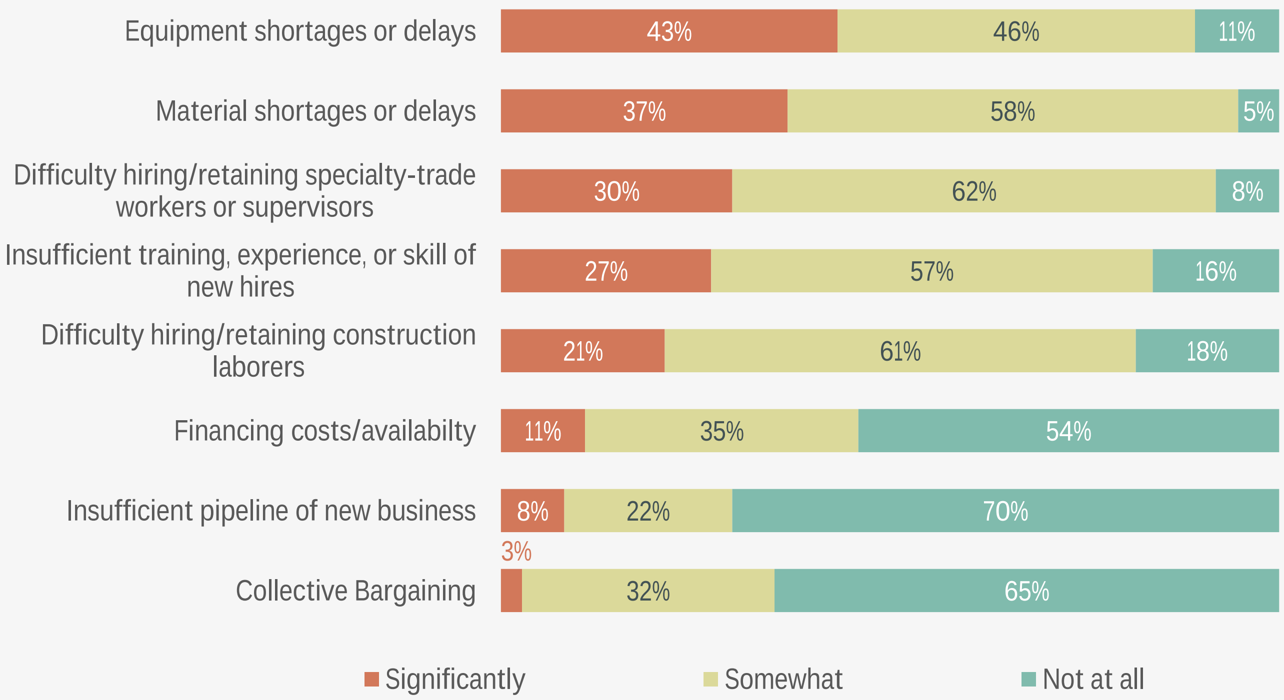


Source: Various Contractors, CBRE Strategic Investment Consulting, March 2023

Impacts on Business

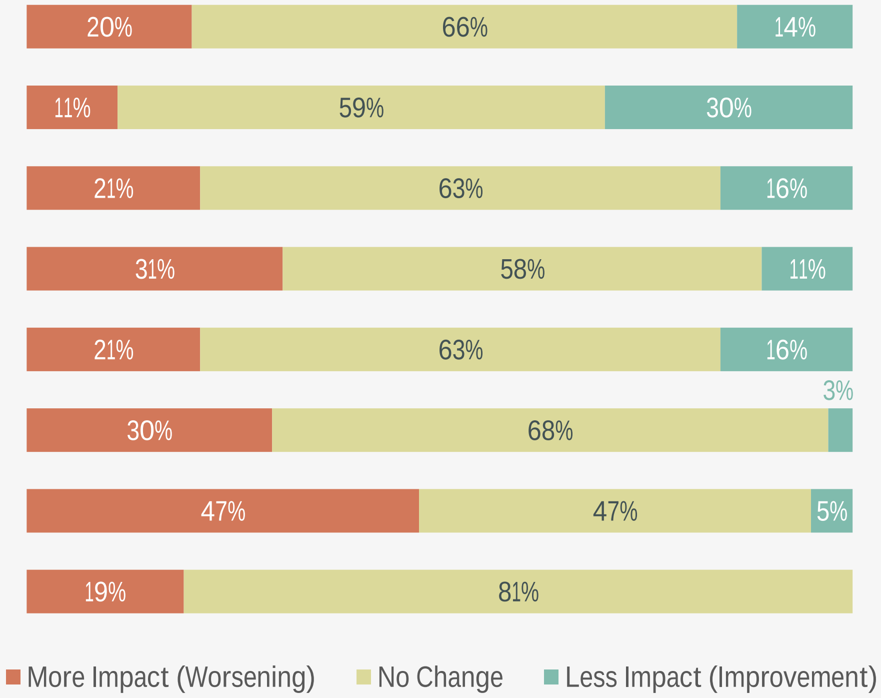
Looking back, material and equipment shortages had the largest impact on respondents' business in recent months, while broader market conditions like demand and capital availability were largely non-issues.

To what extent have each of the factors below negatively impacted your firm's profitability over the prior three (3) months?



Looking ahead, this sentiment is flipped, with the largest share of expected improvement for materials shortages and the largest share of expected worsening for new business pipelines.

How do you expect these factors to change over the next three (3) months?

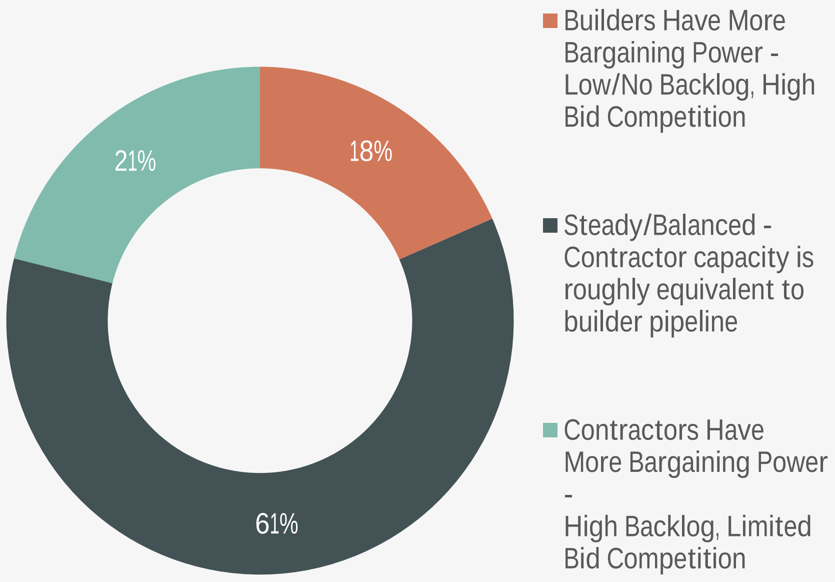


Source: Various Contractors, CBRE Strategic Investment Consulting, March 2023

Impacts on Business

Looking back, most respondents indicated a balance between contractor capacity and builder pipelines, suggesting neither had a significant advantage in setting prices and profit margins.

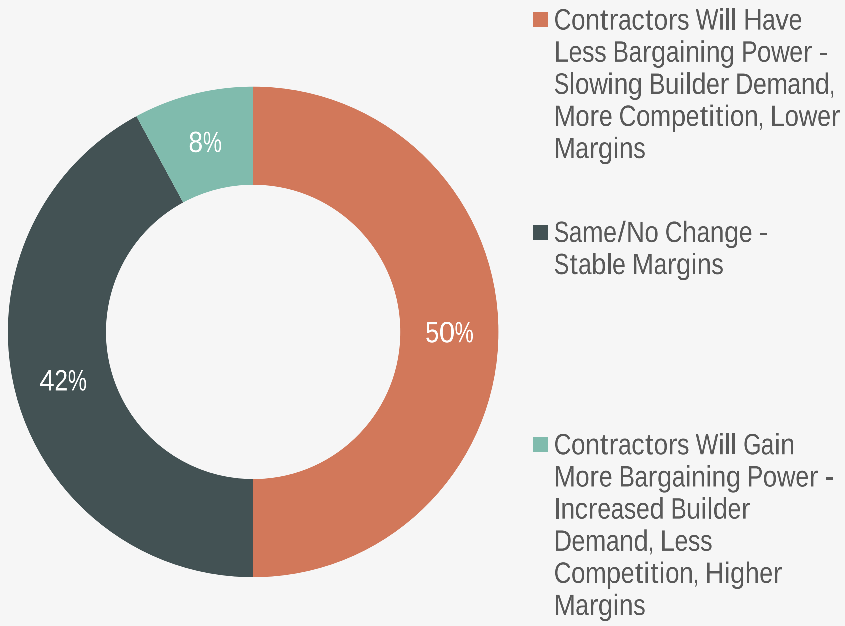
What is your view on the supply/demand conditions in the market over the prior three (3) months?



Source: Various Contractors, CBRE Strategic Investment Consulting, March 2023

Looking ahead, half of respondents expect contractors to lose some bargaining power and reduce margins as builder demand slows, but nearly as many expect conditions to remain unchanged.

What is your outlook for supply/demand conditions in the market over the next three (3) months?



Source: Various Contractors, CBRE Strategic Investment Consulting, March 2023

Other factors that contractors noted as concerning for construction conditions and cost over the next three months included:

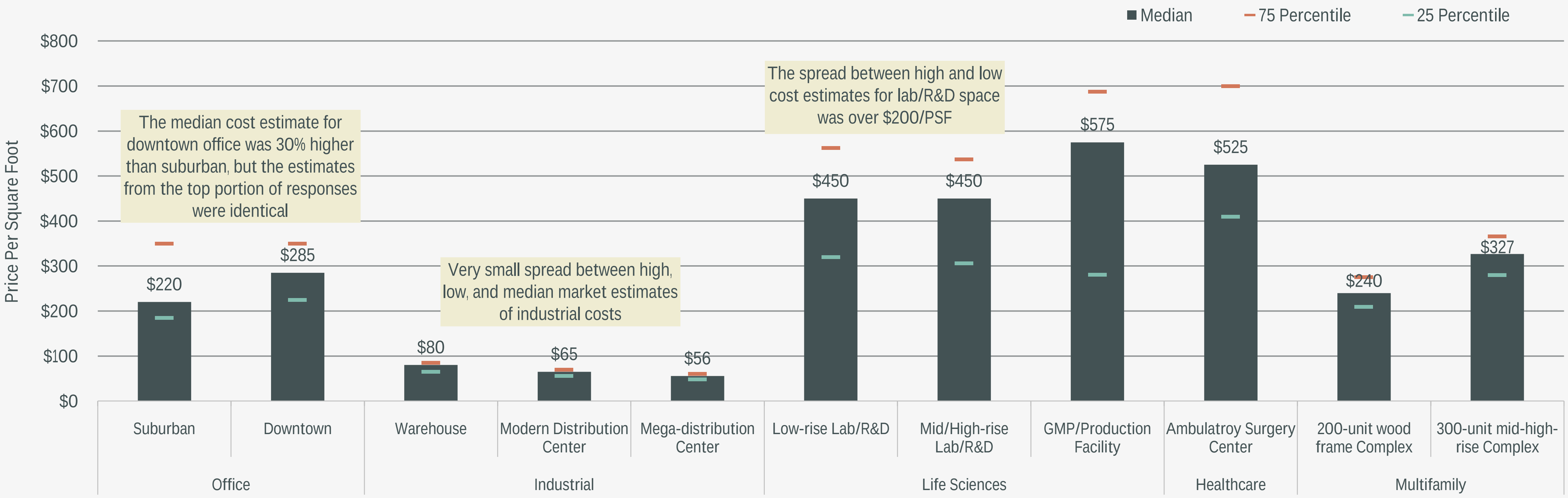
- High and rising lending rates
- Employers' uncertain return-to-office policies
- The potential for sub-contractor defaults
- Pressure on bonding capacity due to a shift from private jobs to public works
- Upcoming code cycle revisions

“Multifamily demand has not gone away. Demand will push to a breaking point somewhere down the line once developers figure out how best to work with the new interest rates. This pent-up demand could spur material, equipment and labor shortages. The unknown is when the dam will burst once again.”

Building Cost Trends

Cost estimates are significantly higher for life sciences and healthcare projects and there were wide ranges between the highest and lowest responses, indicating more variation across geographies and project specifications. The range of cost estimates was much tighter for other sectors—particularly industrial—indicating a greater consensus on typical project costs across markets.

For each property type, what is your best estimate of a current market-rate bid (in $/SF terms) for a standard project (shell + core costs)?



Source: Various Contractors, CBRE Strategic Investment Consulting, March 2023

Building Cost Trends

The table below summarizes the low (25th percentile), middle (median) and high (75th percentile) responses from each market by property type.

For each property type, what is your best estimate of a current market-rate bid (in $/SF terms) for a standard project (shell + core costs)?

	Office			Industrial			Life Sciences			Healthcare			Multifamily		
Market	Low	Middle	High	Low	Middle	High	Low	Middle	High	Low	Middle	High	Low	Middle	High
Atlanta	$206	$213	$219	$51	$72	$94	$500	$500	$600	$750	$750	$750	$278	$280	$283
Austin	$193	$205	$218	-	-	-	-	-	-	$400	$400	$400	$350	$350	$350
Boston	$395	$405	$415	-	-	-	$413	$525	$525	$450	$450	$450	$481	$538	$594
Chicago	$170	$190	$200	$60	$67	$68	$255	$260	$265	-	-	-	$271	$288	$304
Dallas	-	-	-	$44	$48	$56	-	-	-	-	-	-	$273	$315	$358
Denver	$218	$240	$266	$110	$110	$110	$284	$505	$813	$478	$535	$593	$264	$290	$308
Houston	$251	$305	$321	$48	$50	$53	$305	$307	$308	$197	$197	$197	$269	$327	$351
Kansas City	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Los Angeles	$366	$373	$379	$64	$67	$74	$438	$450	$500	$650	$650	$650	-	-	-
Madison	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Minneapolis	-	-	-	-	-	-	-	-	-	-	-	-	$163	$165	$168
New Jersey	-	-	-	$60	$62	$64	-	-	-	-	-	-	-	-	-
Orange County	$230	$254	$277	-	-	-	-	-	-	$525	$525	$525	$289	$315	$341
Philadelphia	$199	$238	$276	$48	$50	$53	$175	$200	$213	$180	$180	$180	$170	$175	$180
Phoenix	$188	$205	$213	$63	$73	$75	$275	$300	$325	$250	$250	$250	$241	$313	$388
Portland	$195	$240	$255	$70	$75	$80	-	-	-	$550	$550	$550	$266	$280	$299
Raleigh	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
San Diego	$500	$500	$500	-	-	-	$625	$650	$650	-	-	-	$365	$365	$365
San Francisco	$388	$413	$450	-	-	-	$500	$550	$575	$500	$500	$500	-	-	-
San Jose	$800	$800	$800	$75	$84	$100	$850	$900	$950	$1,200	$1,200	$1,200	-	-	-
Seattle	$294	$325	$355	$56	$60	$64	$371	$383	$488	$920	$920	$920	$487	$487	$487
St. Louis	$196	$200	$206	$61	$68	$74	-	-	-	-	-	-	$178	$185	$193
Washington, D.C.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

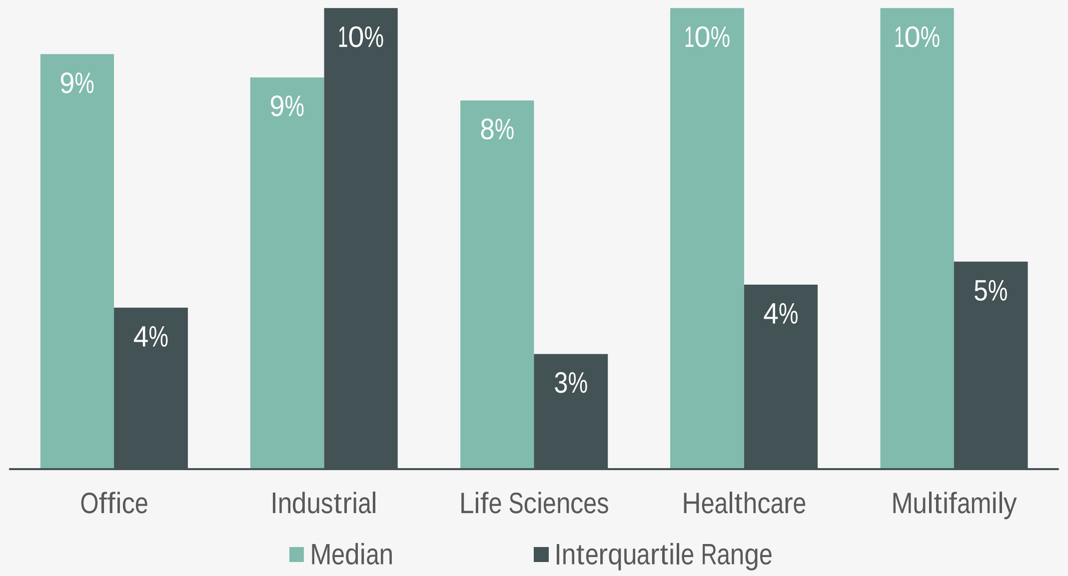
Source: Various Contractors, CBRE Strategic Investment Consulting, March 2023

Note: Markets with "-" indicate no responses

Building Cost Trends

Median estimates of cost escalation over the past year (from the GC perspective) were similar across property types. The range between high and low escalation estimates was widest for industrial and lowest for life sciences—the opposite of what was seen for $/psf estimates.

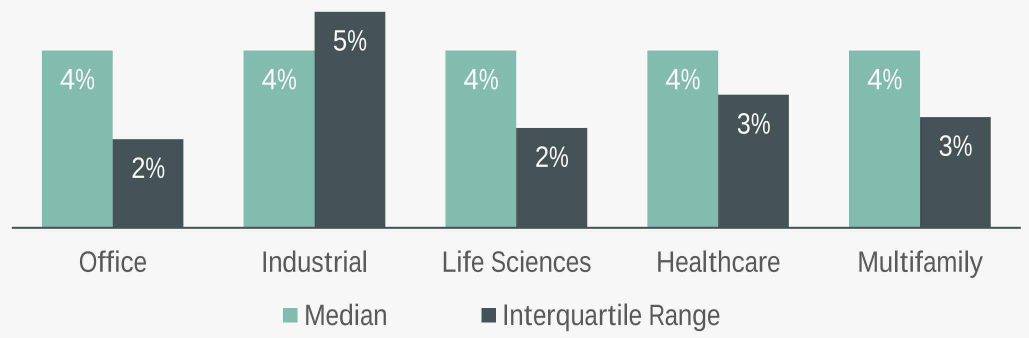
For each relevant property type, estimate the overall construction cost escalation rate your firm experienced over the prior twelve (12) months.



Note: Interquartile Range represents the difference between the 75th percentile response and the 25th percentile response. It provides a strong indicator of the variance of responses adjusted for outlier maximum and minimum responses.
Source: Various Contractors, CBRE Strategic Investment Consulting, March 2023

Looking ahead, median estimates of cost escalation for this year were identical across property types and expected to be less than half of the rate over the prior twelve months.

For each relevant property type, estimate the overall construction cost escalation rate your firm will experience over the next twelve (12) months.

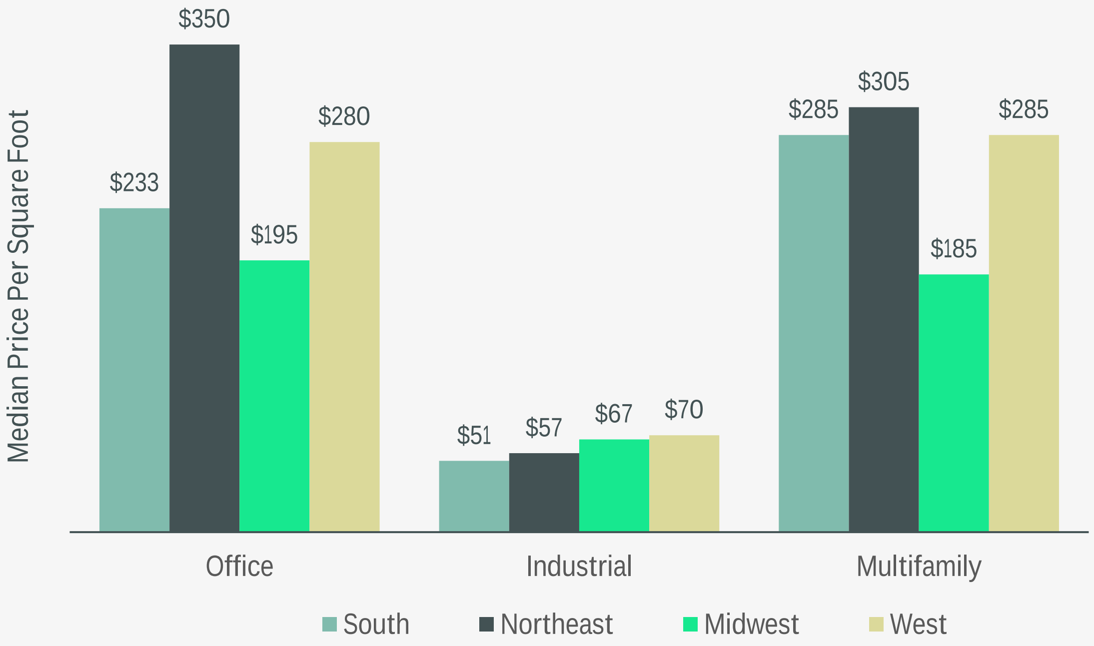


Note: Interquartile Range represents the difference between the 75th percentile response and the 25th percentile response. It provides a strong indicator of the variance of responses adjusted for outlier maximum and minimum responses.
Source: Various Contractors, CBRE Strategic Investment Consulting, March 2023

Building Cost Trends

The West and the Northeast of the U.S. have the highest average construction costs across all property types.

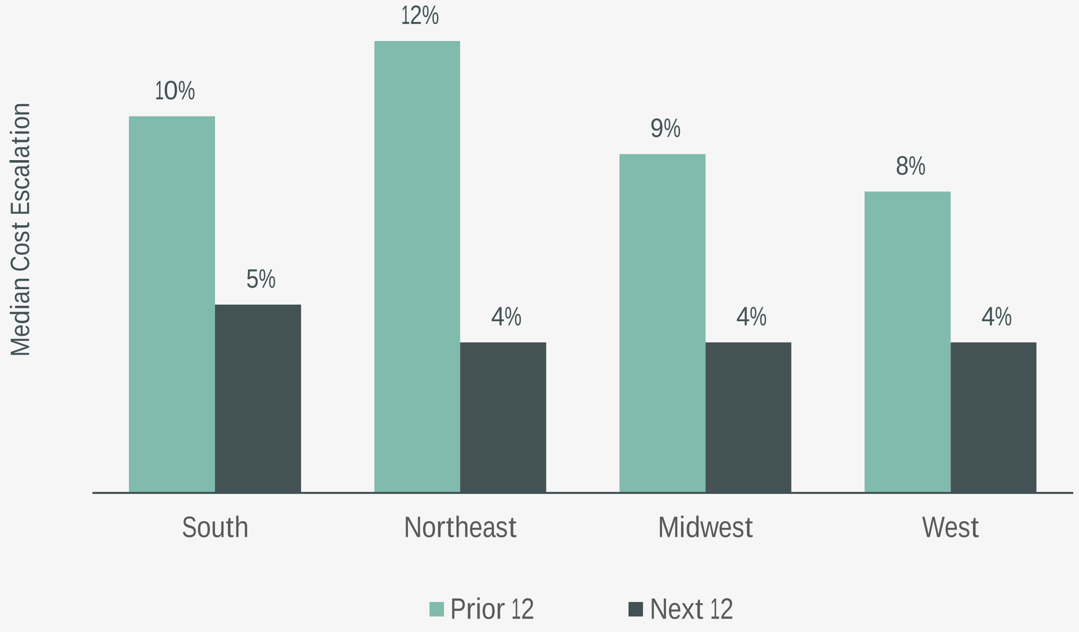
For each relevant property type, what is your best estimate of a current market-rate bid (in $/SF terms) for a standard project (shell + core costs)?



Source: Various Contractors, CBRE Strategic Investment Consulting, March 2023

Overall Costs are expected to increase the most in the South of the U.S.

For each relevant property type, estimate the overall construction cost escalation rate your firm experienced and will experience over the prior and next twelve (12) months.

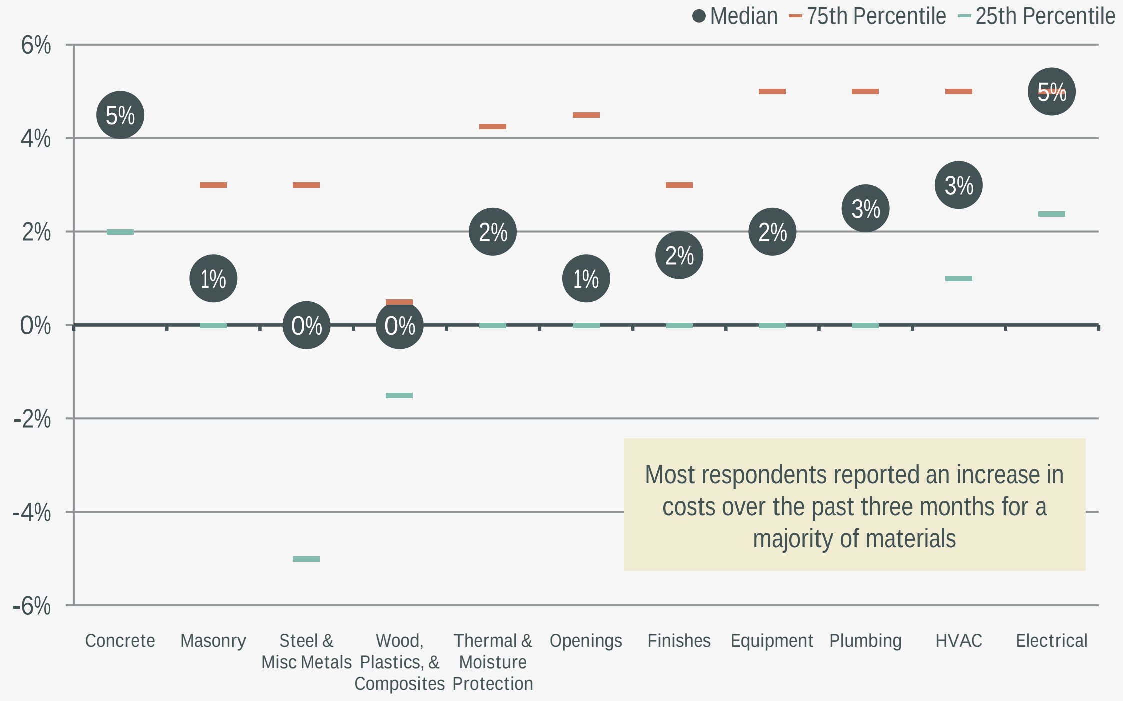


Source: Various Contractors, CBRE Strategic Investment Consulting, March 2023

Materials and Equipment Trends

Concrete and electrical materials experienced the largest recent cost increase.

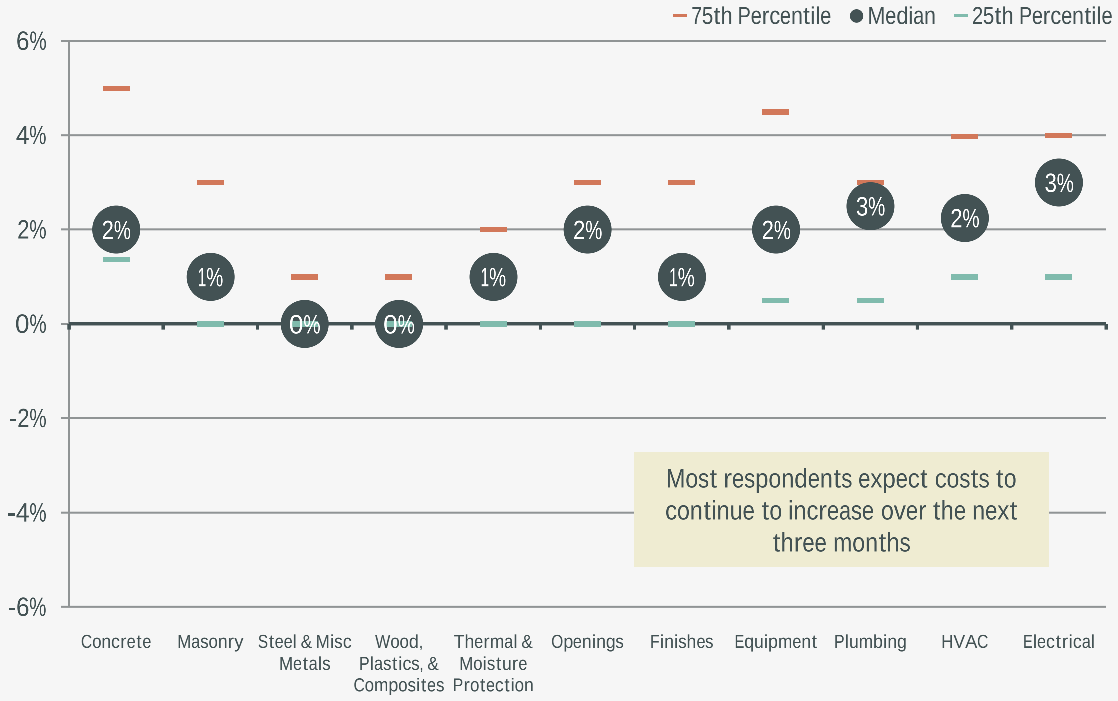
Thinking about only the materials or equipment for each CSI Division below - % Change Over the prior three (3) months?



Source: Various Contractors, CBRE Strategic Investment Consulting, March 2023

Electrical and plumbing costs are expected to increase in cost the moving forward.

Thinking about only the materials or equipment for each CSI Division below - % Change Over the next three (3) months?

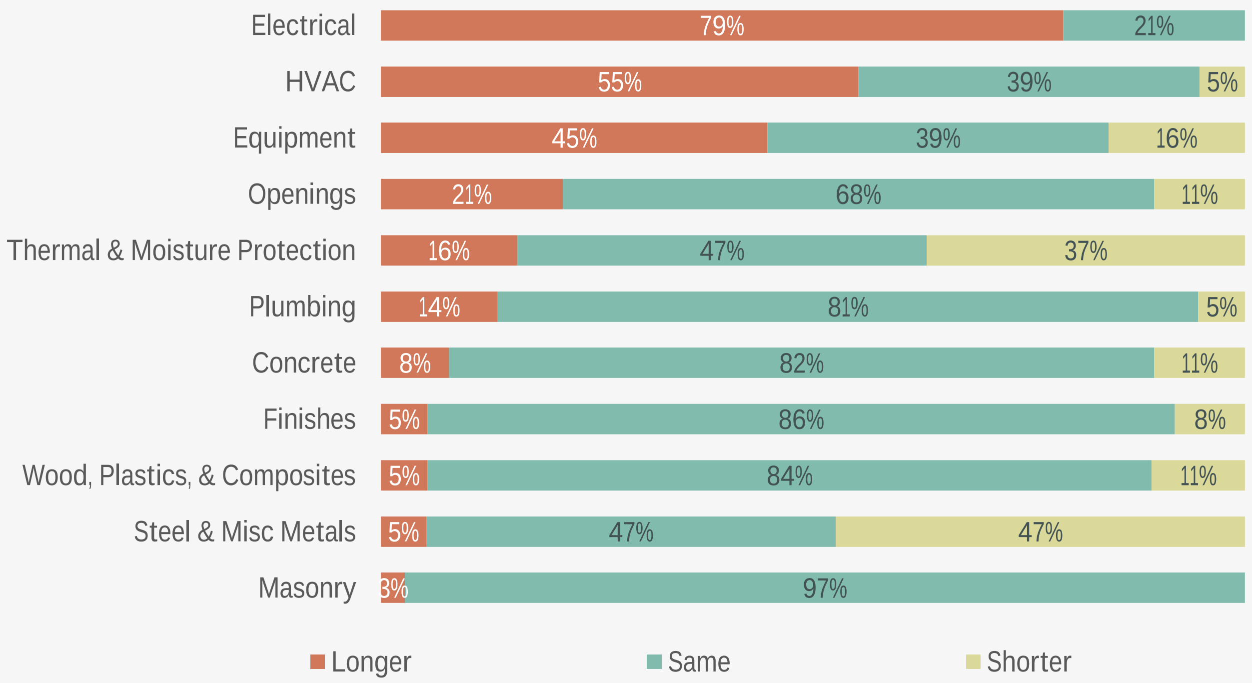


Source: Various Contractors, CBRE Strategic Investment Consulting, March 2023

Materials and Equipment Trends

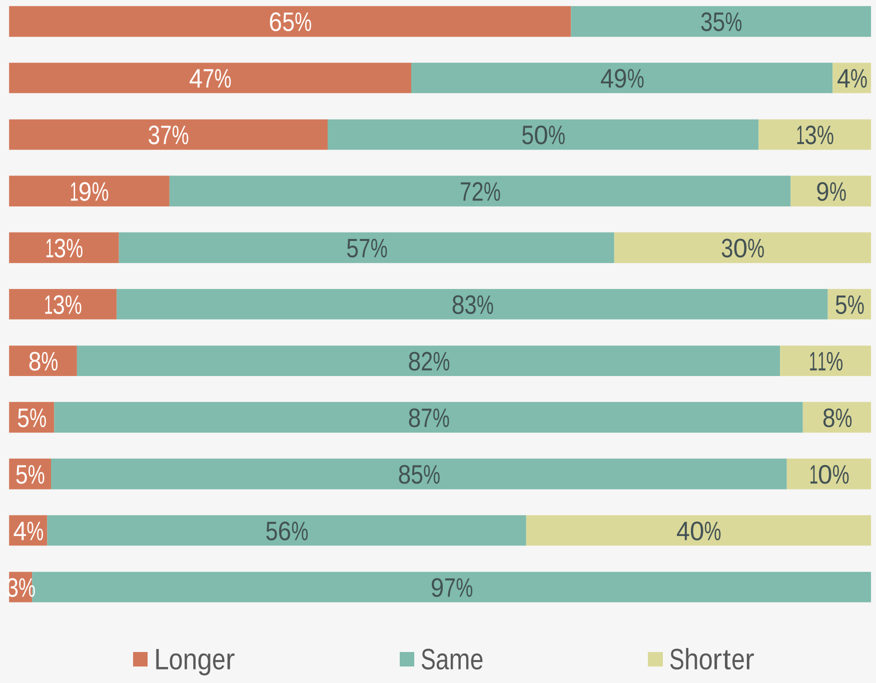
Lead times increased for Electrical, HVAC, and Equipment for a significant number of respondents.

How has the average lead time changed over the prior three (3) months?



Lead times expected to remain mostly stable going forward.

How do you expected the average lead time will change over the next three (3) months?

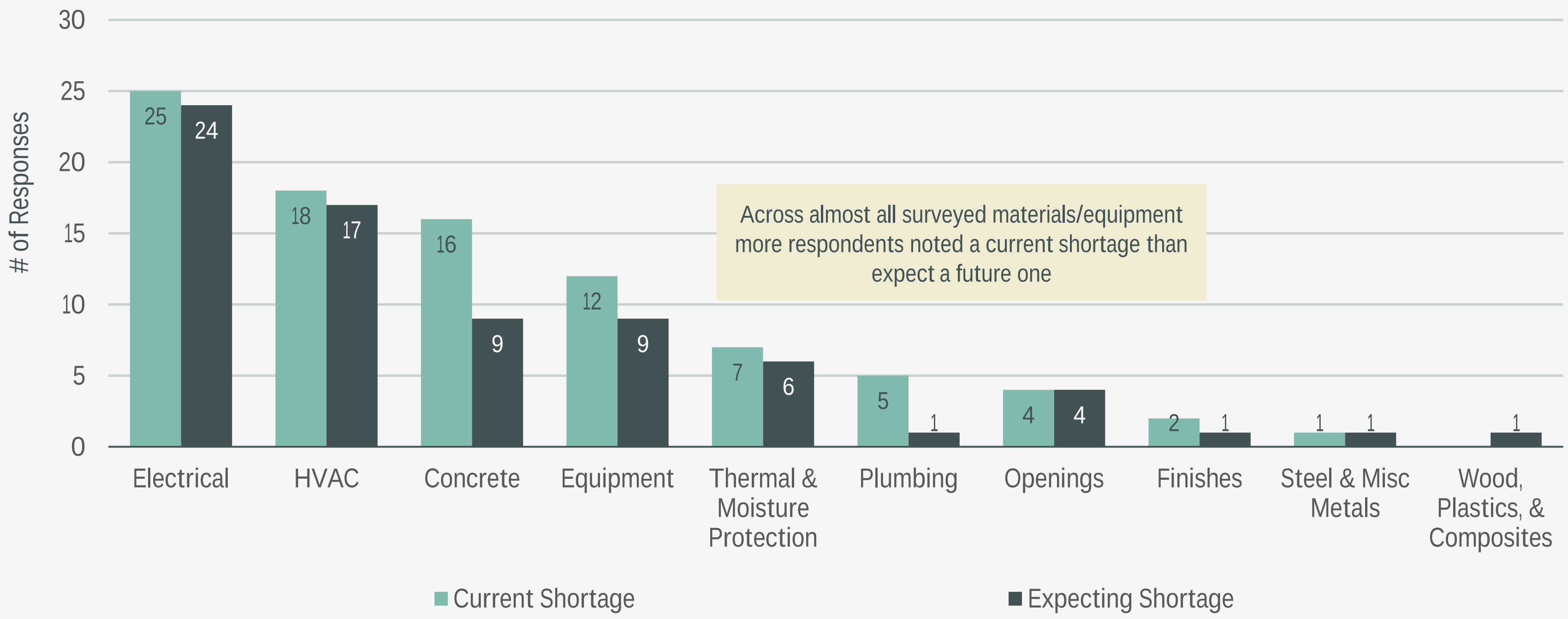


Source: Various Contractors, CBRE Strategic Investment Consulting, March 2023

Materials and Equipment Trends

A significant number of respondents reported current and expected shortages for Electrical, HVAC, Concrete, and Equipment.

Indicate if you are currently experiencing product shortages and if you expect to over the next three (3) months.



Note: There were no reported shortages (current or expected) for masonry products.

Source: Various Contractors, CBRE Strategic Investment Consulting, March 2023

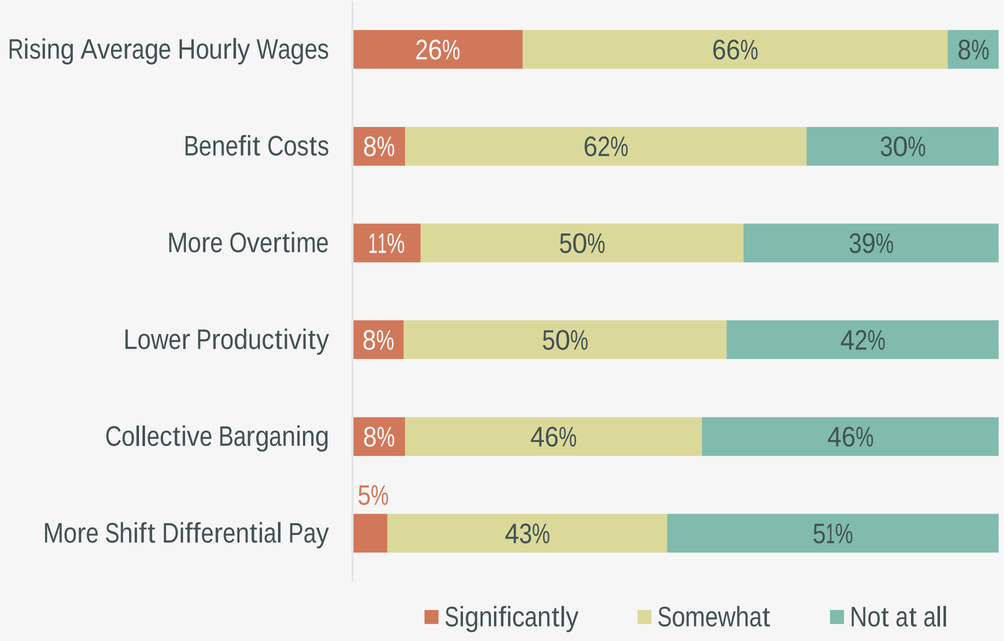
Additional or sub-category materials respondents noted were in shortage or were expected to be in shortage:

- Switchgear
- Generators,
- Data cabling
- Circuit board components
- Wallboards
- Electric plant equipment

Labor Force Dynamics

Rising wages were the number one contributor to higher labor costs for most respondents.

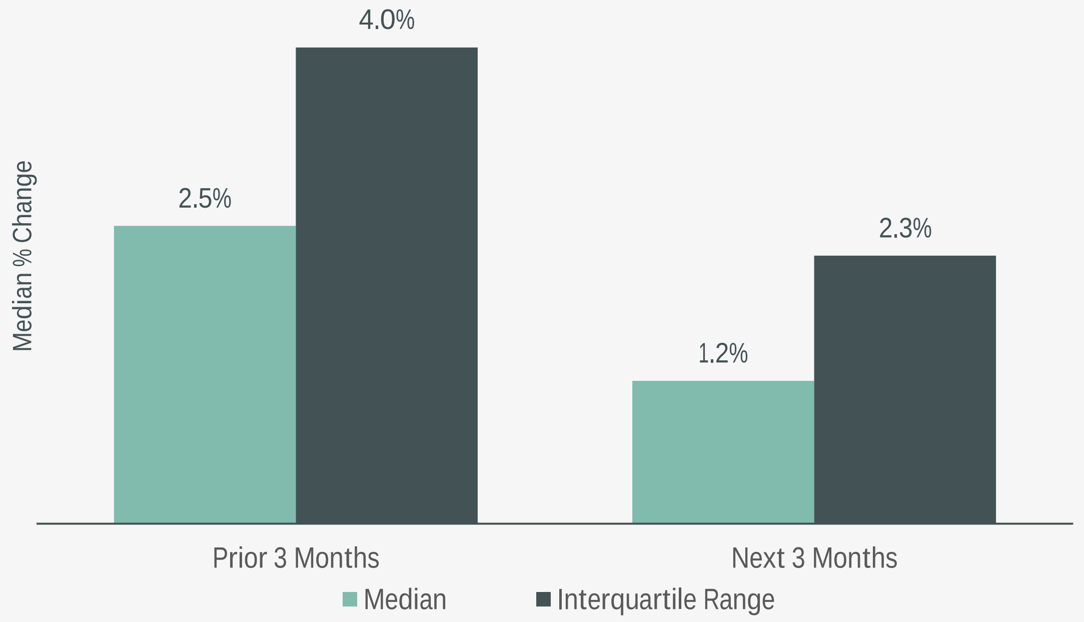
To what extent have each of the factors below negatively impacted your firm's business over the prior three (3) months?



Source: Various Contractors, CBRE Strategic Investment Consulting, March 2023

Labor costs are expected to increase over the next three months but at a lower rate than over the previous three months.

What is the total labor cost change your firm experienced over the prior three (3) months *and is projecting over the* next three (3) months?



Source: Various Contractors, CBRE Strategic Investment Consulting, March 2023

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