Intelligent Investment

Warehouse & Distribution Construction Cost Trends 2023-2024

REPORT

PROJECT MANAGEMENT

CBRE INSIGHTS
MARCH 2024

Contents

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Introduction

Construction costs have soared since the beginning of the pandemic due to multiple factors. Supply chain disruption caused materials shortages and price spikes, while a historically tight labor market drove up construction wages. Simultaneously, an unprecedented spike in U.S. construction activity, especially in the industrial and logistics sector, increased demand pressure on contractors, materials and the workforce.

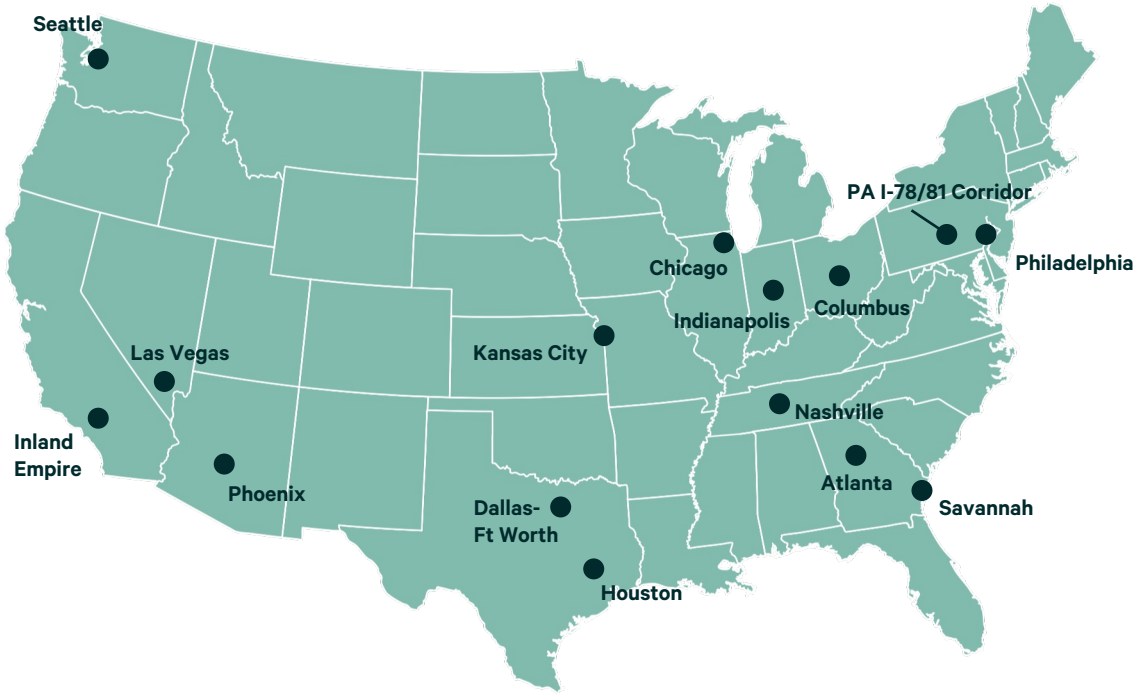
The pandemic also accelerated many key warehouse and distribution demand trends that predate it. The rise of e-commerce and the need for supply-chain resiliency spurred a race for more warehouse space among major occupiers, motivating developers to build more than ever. This immense demand drove industrial construction costs higher than other commercial types, especially for modern warehouse and distribution facilities. As prices rose across the economy, the pace of warehouse construction cost inflation has been approximately 2.5 times the rate of CPI growth since 2019.

Given these trends, CBRE Project Management (CBRE PJM) and CBRE Strategic Investment Consulting (CSIC) partnered to study and present the warehouse sector's unique construction cost and supply chain challenges.

For deeper insight, CBRE PJM conducted a survey of 19 major warehouse construction contractors across 15 major U.S. markets. Survey respondents provided a sample budget of a typical, hypothetical warehouse project across four time periods. Participants were also asked to provide estimated lead times for key materials during these time periods. CBRE PJM and CSIC analyzed more than 60 responses to provide novel insights about the warehouse construction sector.

This report's Appendix outlines the drivers of increased industrial construction demand and cost inflation in more detail, using public data as well as proprietary and third-party sources.

FIGURE 1: Map of Locations Surveyed and Analyzed



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Key Takeaways & Guidance

1

Price estimates vary among contractors and price uncertainty remains.

Contractor price estimates on the cost of industrial construction varied heavily, even within a single market and across material categories, despite providing detailed assumptions. This may indicate some uncertainty that persists in the construction sector.

2

Pandemic-driven cost spikes affected all markets, but unevenly.

Markets were affected differently by pandemic-driven cost spikes. There are natural market-to-market price differences due to local competitive advantages during periods of market equilibrium. But every market experiences cost increases during major supply chain instability, which tended to impact lower-cost markets more.

3

Moderating costs in certain categories appear on the horizon, but sentiment is mixed.

On average, contractors noted costs have been virtually flat since 2022. However, this varies dramatically by market. Some recent budget estimates noted over 10% cost increases, while others noted significant decreases. Contractors' 2024 budget outlooks were more aligned at an average 2% to 4% cost increase. However, contractors in a few markets project further decreases.

4

Lead times for key materials have generally improved and are unlikely to worsen in the near-term.

Normal pre-pandemic lead times for most materials ranged from 6 to 12 weeks, then rose to 12 to 33 weeks as demand spiked and supply chains were disrupted. Lead times for most materials have normalized, which is expected to continue. But lead times for key categories like electrical equipment and HVAC remain two to three times their pre-pandemic timeframe, with little improvement expected this year.

5

Early involvement from experienced professionals is important in this uncertain time.

Given the general construction costs uncertainty this year, underscored by the wide price range cited throughout this report, experienced and connected project management professionals are more important than ever to help ensure optimal timeliness and pricing.

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Cost Survey Results

Price estimates vary among contractors and price uncertainty remains.

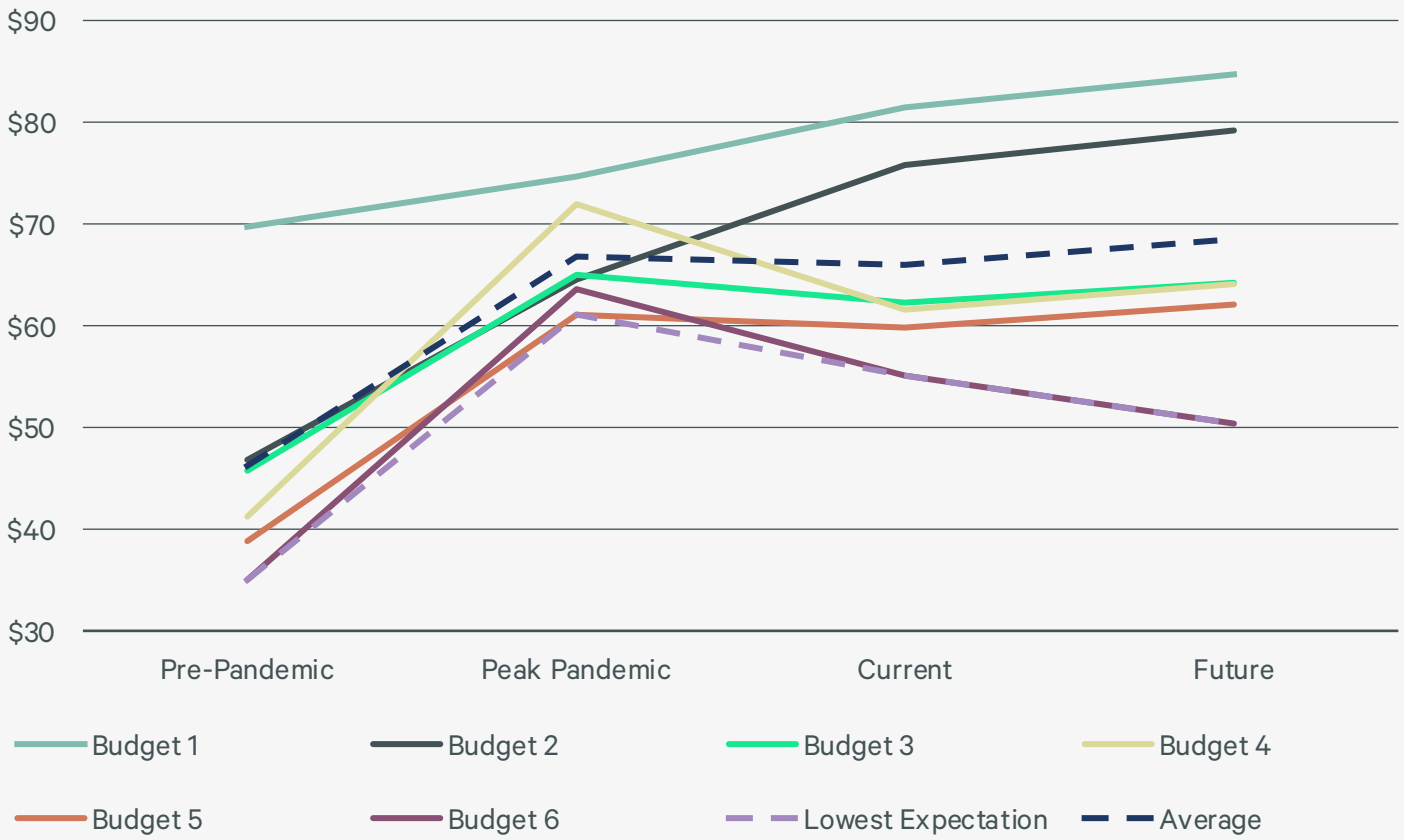
Cost estimates for both price per sq. ft. and escalation rate varied, even within a single market.

Cost estimates from Chicago-based contractors demonstrate how much pricing and escalation rate variance is possible (Figure 2). Pre-pandemic price estimates were less varied, except for Budget 1. There was similar variation during the pandemic's peak, with some disparity in how the prices changed. Price estimates diverged further in 2023 and varied most for 2024.

This example demonstrates how contractors may have interpreted the specifications differently, but also how differently contractors experienced the market over the past several years. This underscores the importance of working with experienced and skilled project management professionals to help ensure the lowest budget cost.

The following pages show aggregated cost data for the U.S. and the 15 markets in this study, so it is important to note the broad variance underlying these reported averages.

FIGURE 2: Budget Examples from Chicago-Area Contractors



Note: Lowest expectation reflects the lowest budget cost in each time-period.
Source: Various Contractors, CBRE PJM, CBRE Strategic Investment Consulting, Data as of Q3 2023

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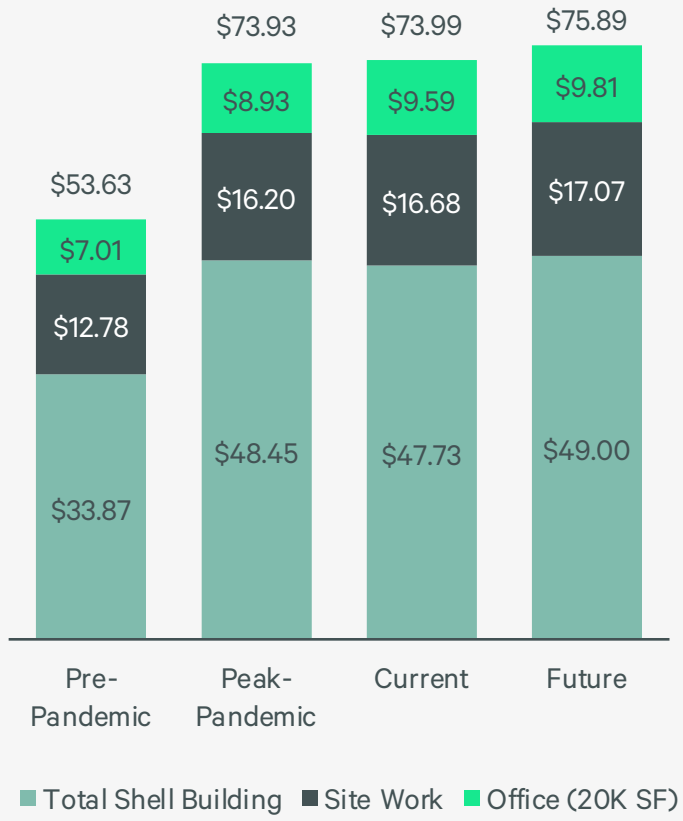
Industrial construction cost inflation has generally settled from its peak.

In aggregate, CBRE PJM's contractor survey respondents reported total industrial construction costs increased 38% from the pre- to peak-pandemic. They reported virtually unchanged costs from the peak-pandemic to the current period, and a 2.6% increase from the current to future period.

Building shell makes up about 65% of the total construction cost, site work accounts for 23% and office TIs account for about 13%.

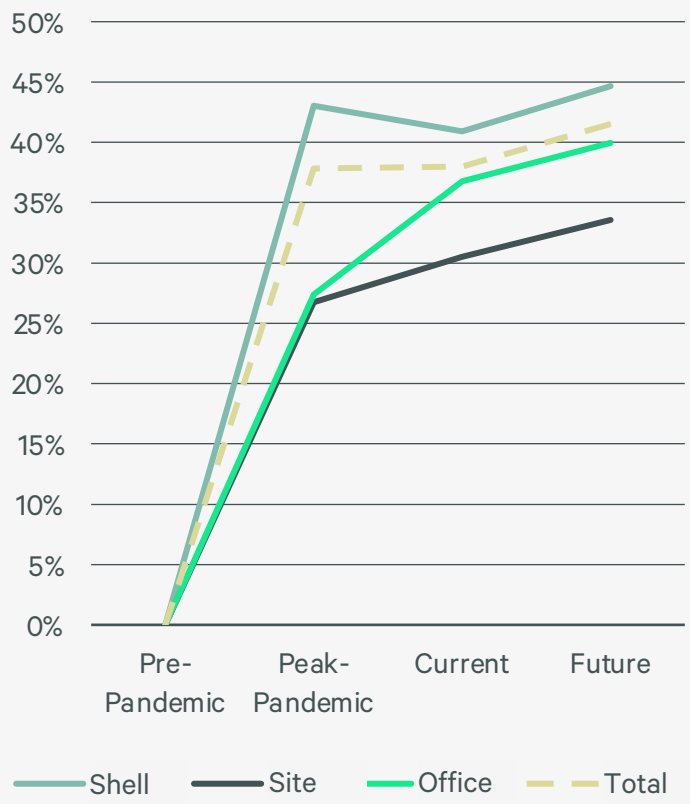
Building shell structure construction, site work and office TIs each sharply increased in cost from the pre- to peak-pandemic. Shell costs increased by 43% over this period, the biggest increase. This was due to the price volatility of specific materials required for shell construction, such as large amounts of concrete and steel (Figure 6). Site utilities, asphalt paving and landscaping/irrigation were the primary drivers of cost increases of site work during the peak-pandemic. Office TI costs have been rising more quickly since the peak-pandemic because HVAC and electrical equipment can be a large share of office build-outs.

FIGURE 3: Industrial Construction Costs by Major Category & Time Period



Source: Various Contractors, CBRE PJM, CBRE Strategic Investment Consulting, Data as of Q3 2023

FIGURE 4: Cumulative Rate of Industrial Construction Cost Increases Since 2019



Source: Various Contractors, CBRE PJM, CBRE Strategic Investment Consulting, Data as of Q3 2023

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Industrial construction costs spiked more than other commercial types because of its highly concentrated materials mix.

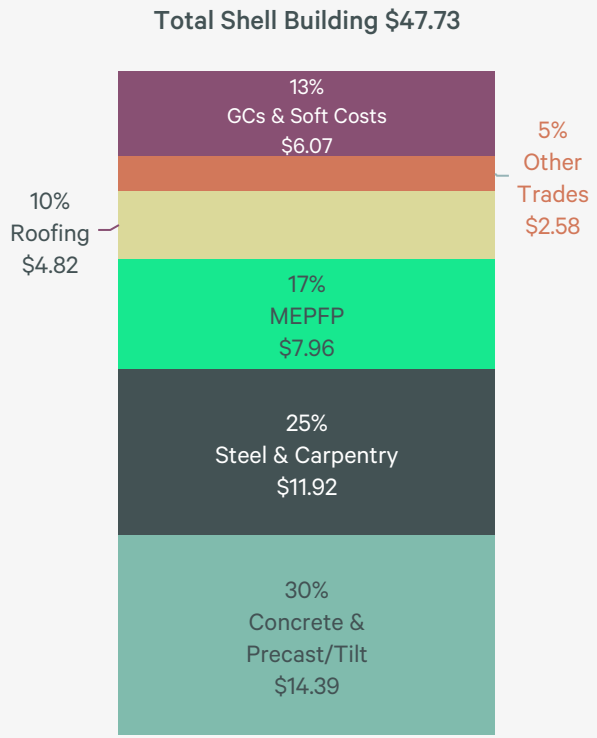
Structural steel and carpentry as well as concrete and precast/tilt make up more than half of the shell cost. Each had higher price spikes during the peak-pandemic, along with roofing costs.

Most other commercial construction has less cost concentration in a few core materials, decreasing overall price volatility compared to industrial construction.

Since the peak-pandemic, most contractors reported that steel prices decreased. They also reported concrete and precast/tilt costs increased by 8%—the sharpest increase of any material category over this period. Mechanical, electrical, plumbing and fire protection (MEP/FP) was up 5% during this period.

Looking ahead, contractors expect shell costs to increase by 3% from the current to future period. Concrete and precast/tilt as well as MEP/FP are the two material categories expected to drive this increase, with both expected to rise by 4% over this period.

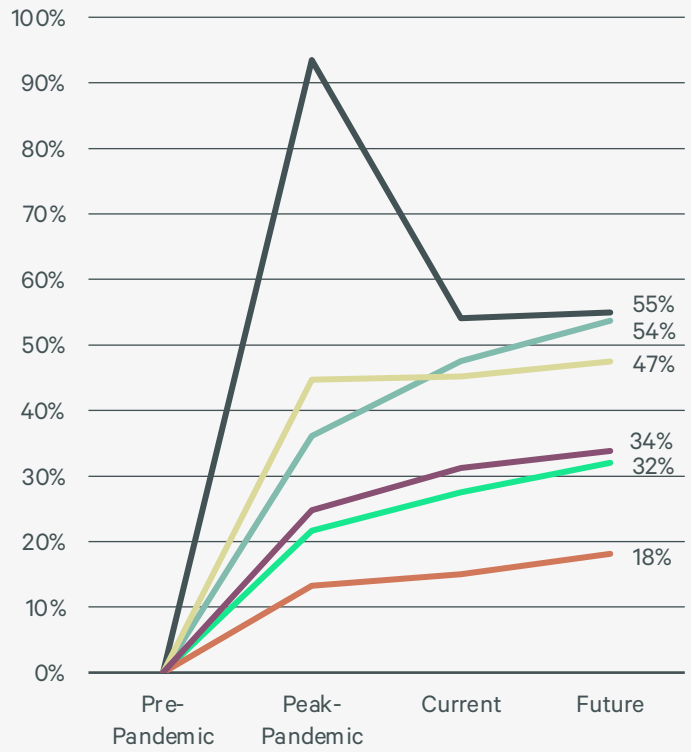
FIGURE 5: Industrial Shell Budget Components, U.S. Average as of Q3 2023



Source: Various Contractors, CBRE PJM, CBRE Strategic Investment Consulting, Data as of Q3 2023

Note: Steel and carpentry were combined into one category because the use of steel in warehouse construction varies across U.S. regions. For example, Western respondents allocated less budget for steel because panelized wood is more commonly used there.

FIGURE 6: Cumulative Rate of Industrial Shell Construction Cost Increases Since 2019



Source: Various Contractors, CBRE PJM, CBRE Strategic Investment Consulting, Data as of Q3 2023

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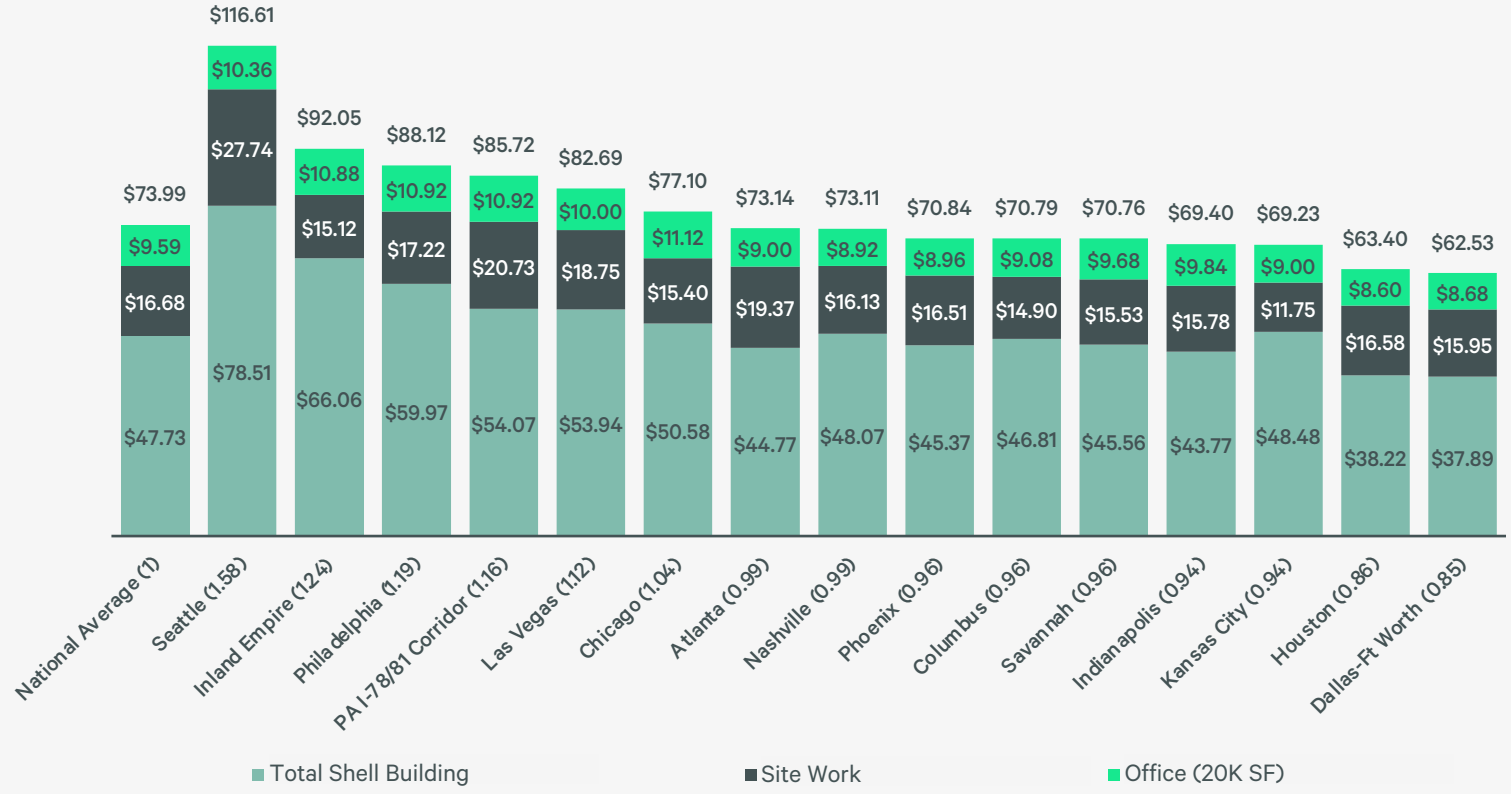
Industrial project costs per sq. ft. can vary dramatically by region and market.

Costs for shell materials and site work tend to be lower in the Sun Belt.

Shell cost differences generally had the biggest impact on construction cost variation across markets. Markets furthest from the major U.S. steel-importing ports (i.e., Houston, Mobile, AL, New Orleans and Los Angeles/Long Beach) tended to have higher steel costs, likely due to transportation costs during a period of higher freight prices. Concrete prices were lowest in the South and Midwest, which sharply lowers industrial development costs in these markets. In contrast, concrete and precast/tilt costs spiked dramatically in Seattle due to a prolonged strike impacting regional concrete producers. This caused major shortages in this market and rationalizes a large part of Seattle's outlier pricing displayed in Figures 7 and 8.

Site work cost estimates also varied by market, generally due to labor and service cost differences. Secondarily, materials and topography costs are major factors. Site concrete and asphalt paving accounted for about one-third of site work costs. Their pricing was variable but highest in Houston, Dallas-Ft. Worth, Phoenix and Philadelphia. Topsoil, earthwork, grading and excavation averaged about a quarter of site work costs, tending to be higher in the South and Northeast. Site utilities were also a key factor in sitework costs and were much higher in the Northeast. Even within each market, site work estimates varied more than most materials, so market-wide estimates for site work are less likely to reflect individual estimates in any market.

FIGURE 7: Price Per Sq. Ft. Estimate of a 500,000-Sq.-Ft. Warehouse Built in August 2023 (Select Major Markets)



Note: Parenthetic number equals the ratio of market total cost to national average (1.00). Example: Las Vegas is 12% more expensive than the national average.
Source: Various Contractors, CBRE PJM, CBRE Strategic Investment Consulting, Data as of Q3 2023

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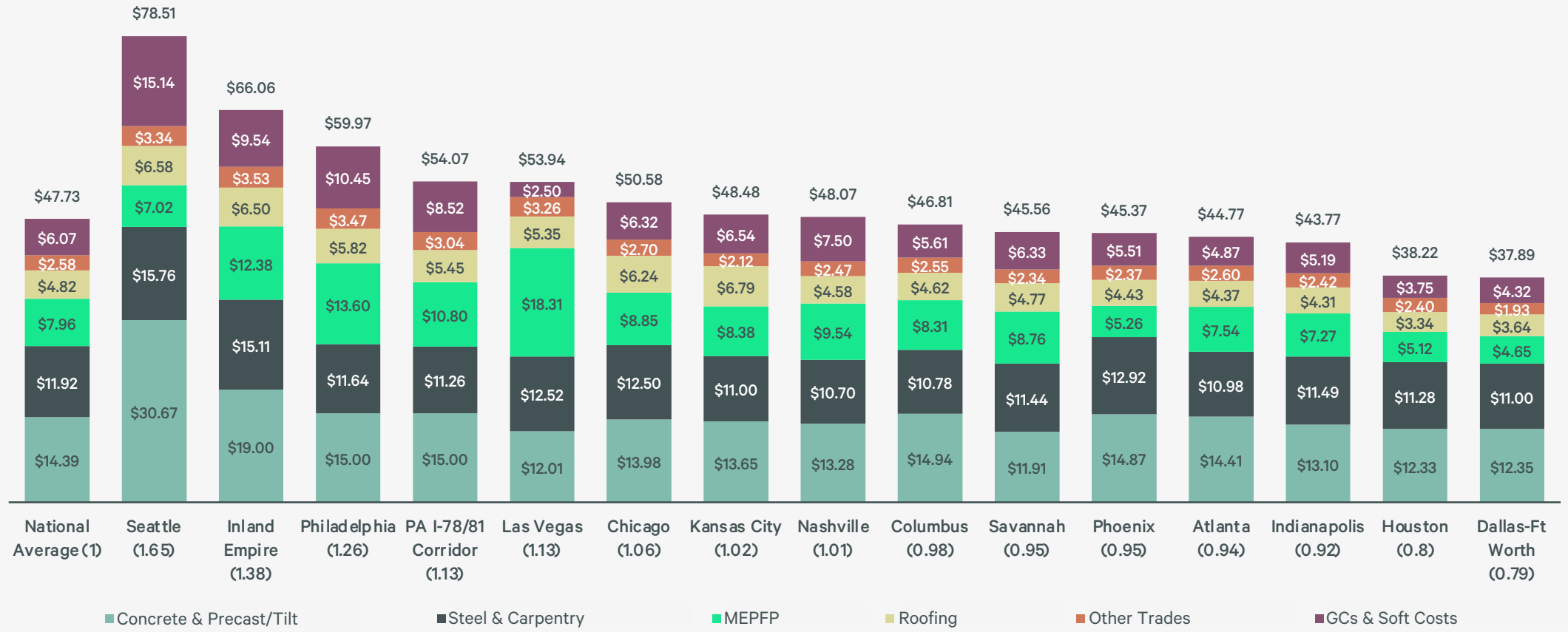
FIGURE 8: Price Per Sq. Ft. Breakdown of Total Shell of a 500,000-Sq.-Ft. Warehouse Built in August 2023 (Select Major Markets)



Note: Parenthetic number equals the ratio of market shell cost to national average (1.00). Example: A shell building in Las Vegas is 13% more expensive than the national average.
Source: Various Contractors, CBRE PJM, CBRE Strategic Investment Consulting, Data as of Q3 2023

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Pandemic-driven cost spikes affected all markets, but unevenly.

Markets in the Midwest and Sun Belt were more likely to have outlier price increases for key shell materials like concrete, steel and roofing.

Every market with an above-average total cost increase from the pre- to peak-pandemic had this in common: at least one key material had an above-average cost increase, but higher cost spikes were also a consequence of starting with a lower cost base. There are natural market-to-market price differences due to local competitive advantages during periods of market equilibrium, but every market experiences cost increases during major supply chain instability.

Savannah, GA, Nashville, TN, Columbus, OH, the Inland Empire, CA and Philadelphia experienced below-average inflation from the pre- to peak-pandemic, but these markets' costs increased above average from then to the current period (Figure 9). This has primarily been due to rising concrete and precast/tilt costs in these markets, up almost double the national average over this time period.

Costs have declined since the peak-pandemic in most of the highest-inflation markets. Additionally, contractors in Houston and Atlanta expect further cost declines this year. Most other markets are projected to see costs rise by less than 5% this year, which more closely resemble pre-pandemic inflation rates. Figure 10 breaks down price changes by shell building material category.

FIGURE 9: Change in Cost Per Sq. Ft. of an Industrial Construction Project by Time Period

	Pre-Pandemic $/SF	Pre-Pandemic to Peak-Pandemic	Peak-Pandemic to Current	Current to Future
Houston	$45.65	50.8%	-7.9%	-1.5%
Atlanta	$49.70	49.4%	-1.5%	-1.3%
Phoenix	$53.21	46.0%	-8.8%	1.6%
Indianapolis	$48.79	43.4%	-0.8%	2.5%
Dallas-Ft. Worth	$48.20	43.3%	-9.5%	3.4%
Las Vegas	$63.63	39.3%	-6.7%	3.5%
Kansas City	$45.47	38.3%	10.1%	5.6%
U.S. Total	**$53.63**	**37.8%**	**0.1%**	**2.6%**
Chicago	$55.23	36.7%	2.1%	3.9%
Nashville	$48.23	36.2%	11.3%	6.2%
Columbus	$48.71	35.5%	7.2%	3.7%
Savannah	$47.97	28.6%	14.7%	0.0%
PA I-78/81 Corridor	$65.60	25.0%	4.5%	4.1%
Inland Empire	$66.58	22.2%	13.2%	4.6%
Philadelphia	$64.45	21.1%	12.9%	4.4%
Seattle	$96.75	19.6%	0.8%	3.1%

Note: Price decreases highlighted in green.
Source: Various Contractors, CBRE PJM, CBRE Strategic Investment Consulting, Data as of Q3 2023

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FIGURE 10: Shell Construction Components Cost Changes of a 500,000-Sq.-Ft. Warehouse (Select Major Markets)

	ATLANTA	CHICAGO	COLUMBUS	DALLAS-FT. WORTH	HOUSTON	INDIANAPOLIS	INLAND EMPIRE	KANSAS CITY	LAS VEGAS	NASHVILLE	PENNSYLVANIA (I-78/81 CORRIDOR)	PHILADELPHIA	PHOENIX	SAVANNAH	SEATTLE	U.S. TOTAL
Pre-Pandemic to Peak	**56%**	**46%**	**42%**	**51%**	**64%**	**48%**	**23%**	**43%**	**43%**	**36%**	**28%**	**22%**	**50%**	**32%**	**23%**	**43%**
Concrete + Precast/Tilt	48%	24%	20%	38%	43%	43%	28%	28%	61%	33%	30%	31%	52%	31%	17%	36%
Steel+ Carpentry	134%	130%	136%	96%	112%	97%	47%	71%	77%	91%	70%	54%	91%	86%	45%	93%
MEPFP	22%	15%	11%	30%	78%	29%	8%	22%	28%	15%	16%	7%	27%	10%	15%	22%
Roofing	72%	64%	53%	60%	54%	43%	10%	103%	28%	33%	18%	10%	34%	28%	11%	45%
Other Trades	25%	11%	6%	8%	61%	20%	-16%	10%	80%	-5%	3%	-14%	13%	0%	17%	13%
GCS & Soft Costs	24%	28%	30%	33%	36%	23%	24%	37%	8%	28%	17%	21%	22%	18%	15%	25%
Peak-Pandemic to Current	**-2%**	**-1%**	**5%**	**-12%**	**-13%**	**-3%**	**13%**	**9%**	**-1%**	**11%**	**4%**	**13%**	**-11%**	**17%**	**0%**	**-1%**
Concrete + Precast/Tilt	-2%	15%	26%	5%	4%	2%	22%	15%	-5%	25%	12%	24%	-8%	25%	0%	8%
Steel+ Carpentry	-15%	-26%	-24%	-34%	-31%	-17%	-5%	-1%	-9%	-13%	-13%	-6%	-28%	6%	-6%	-20%
MEPFP	15%	11%	14%	-11%	-20%	6%	12%	15%	7%	9%	7%	11%	-5%	14%	2%	5%
Roofing	-1%	-3%	6%	-24%	-10%	4%	24%	7%	5%	10%	14%	23%	-5%	28%	5%	0%
Other Trades	9%	12%	14%	-1%	-26%	-1%	18%	12%	-16%	16%	-7%	17%	-3%	16%	0%	2%
GCS & Soft Costs	4%	5%	8%	-2%	-11%	2%	12%	8%	11%	18%	9%	12%	4%	12%	4%	5%
Current to Future	**-2%**	**4%**	**4%**	**4%**	**-1%**	**3%**	**5%**	**6%**	**4%**	**4%**	**4%**	**4%**	**2%**	**0%**	**3%**	**3%**
Concrete + Precast/Tilt	6%	5%	4%	4%	2%	3%	4%	5%	3%	5%	4%	4%	3%	8%	3%	4%
Steel+ Carpentry	-9%	3%	2%	3%	-6%	2%	4%	6%	3%	3%	4%	4%	0%	-11%	3%	1%
MEPFP	0%	5%	4%	3%	1%	3%	4%	8%	4%	4%	4%	4%	3%	1%	3%	4%
Roofing	-9%	2%	4%	4%	-1%	3%	4%	5%	4%	4%	4%	4%	2%	-9%	3%	2%
Other Trades	-1%	5%	4%	4%	-2%	3%	4%	5%	4%	4%	4%	4%	0%	1%	3%	3%
GCS & Soft Costs	-11%	3%	4%	2%	-6%	4%	8%	5%	4%	4%	4%	4%	0%	-2%	4%	2%

Note: Parenthetic number equals the ratio of market shell cost to national average (1.00). Example: A shell building in Las Vegas is 13% more expensive than the national average.
Source: Various Contractors, CBRE PJM, CBRE Strategic Investment Consulting, Data as of Q3 2023

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Lead times for key materials have generally improved and are unlikely to worsen in the near-term.

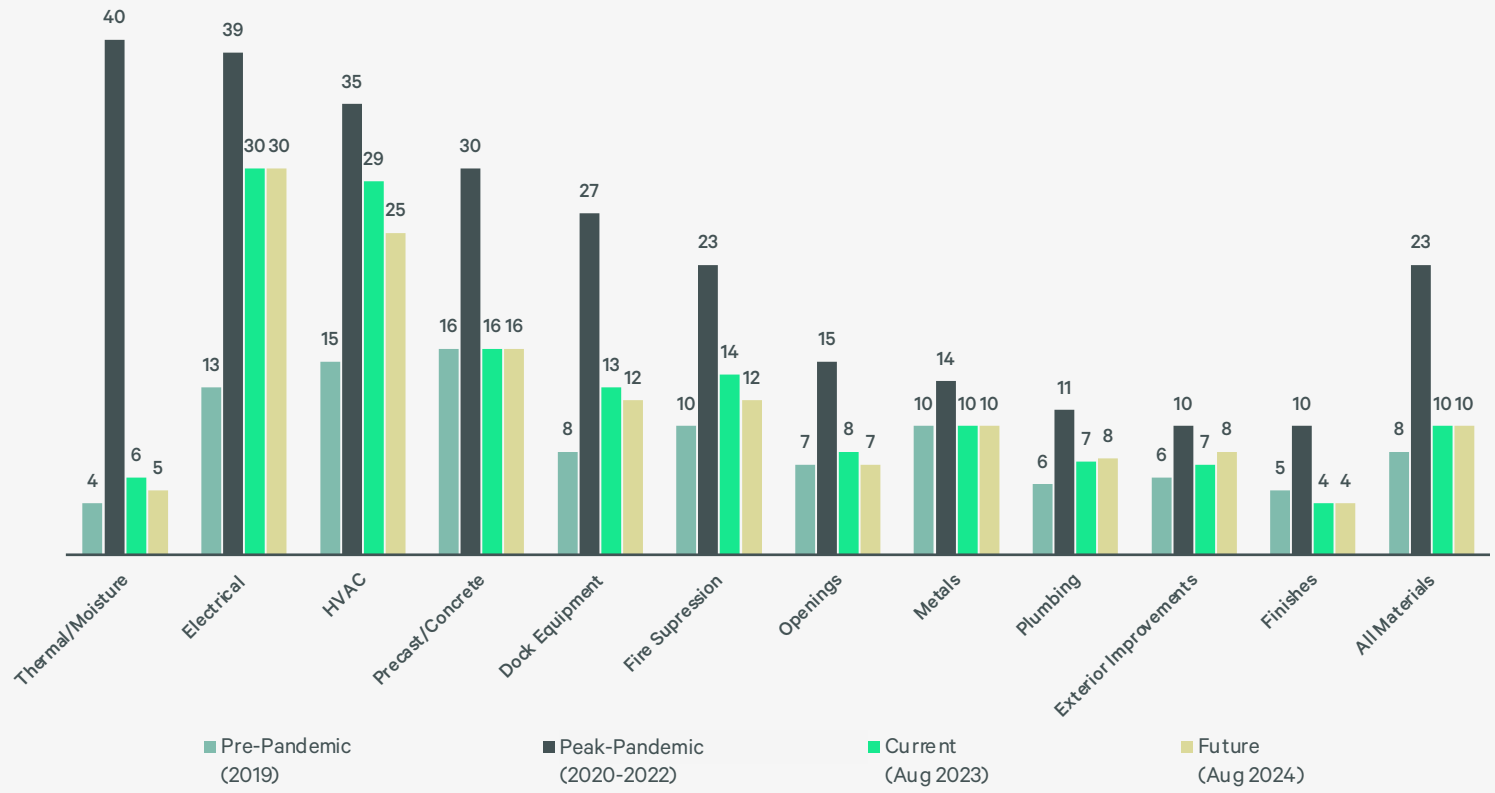
Average materials lead times increased by two to three times during the peak-pandemic.

Normal pre-pandemic lead times ranged from 6 to 12 weeks for most materials. As demand spiked and supply chains were disrupted, most materials' lead times ranged from 12 to 33 weeks. Lead times for thermal and moisture protection (which includes roofing) increased the most during the pandemic but are nearing their pre-pandemic norm. Respondents from Atlanta and Savannah, GA noted the highest spike in lead times in this category, but also reported improved timeframes through the current period.

Lead times for other hard-hit materials like electrical equipment and HVAC have improved from their pandemic peak but remain at two to three times their pre-pandemic timeframe. Little improvement is expected this year. Central U.S. markets like Dallas, Indianapolis, IN and Kansas City, MO are currently experiencing the highest lead times for these materials, while Chicago and the Inland Empire have lead times closer to their pre-pandemic norm.

Overall, materials lead times are mostly expected to stay the same or improve this year in all markets surveyed.

FIGURE 11: Median Reported Lead Time by Time Period



Source: Various Contractors, CBRE PJM, CBRE Strategic Investment Consulting, Data as of Q3 2023

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Methodology

CBRE PJM surveyed 19 major contractors spanning 15 U.S. markets. We solicited detailed budgets for a hypothetical warehouse/distribution facility over four different time periods.

Our primary goal was to learn the underlying price impacts unique to industrial construction across time periods and markets.

Survey participants were asked to provide detailed budget estimates for site work, shell and office tenant improvements (TI), including important material categories. Participants were instructed to assume the project is a 500,000-sq. ft. Class A spec warehouse (Figure 12) for comparable responses across contractors and markets.

Project estimate time periods used in this report:

- Pre-pandemic: 2019
- Peak-pandemic: 2020-2022 (actual date will vary by respondent and market)
- Current: Q3 2023
- Future: Q3 2024

Respondents were asked to base budget values on a "lowest expectation of cost," meaning project costs would not be less than what is reported. Some outlier cost per sq. ft. responses were adjusted up or down to better reflect market averages and align more with relative costs learned from other sources (including proprietary CBRE data). However, reported changes over time were left as initially reported. Due to a large variance in responses, office TI data was augmented using CBRE's latest cost guide.

Additionally, many respondents were asked to report on multiple markets. The 15 markets were chosen based on their major size, as well as geographic variation and contractor relationships. To determine a national average, a weighted average was calculated for each market using the volume of industrial construction in the market since 2020. In total, 60 responses were used for this analysis.

FIGURE 12: Hypothetical Specs Provided to Survey Respondents

Grade	Class "A" speculative new warehouse construction
Building/Land Size	500,000 sq. ft. structure on 28.7 acres
FAR	0.4
Site Complexity	Minimal site complexity (soils, topography, environmental, balanced etc.). Includes earthwork, site utilities, code compliant parking and landscaping, 135' deep truck docks, perimeter fence.
Clear Height	36'
Building Type	Load bearing precast (or tilt up) concrete panels with structural steel framing and deck to support roof
# of Docks	50
Sprinkler	ESFR fire sprinkler system
Roof	15-year membrane roof system
Slab	7" unreinforced concrete slab
Electrical	2,500 amp electrical service
Lighting	LED fixtures (>25 FCS at warehouse)
Office	20,000 sq. ft. "medium"/"average" level of finish for an industrial office product type. On grade (no mezzanines, stairs or elevators).
Soft	Includes typical soft costs (design, project management, permitting, etc.)
Does NOT Include	Land purchase, broker commissions or legal costs
	Non-standard construction or office fit-out
	Hurricane or seismic conditions
	Warehouse A/C
	Non-standard fire suppression
	FF&E
	LEED or sustainability requirements

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Plans to provide you with deeper insights.

In a 2024-2025 edition of the report, CBRE PJM and CBRE CSIC plan to improve the survey methods to gain better insights on how industrial construction costs are evolving. Improvements will include:

- Focus on different regional methods of construction to capture better pricing differences (i.e., steel vs. wood structure, HVAC needs, etc.).
- Seek out more detail, including more exact breakdowns for precast/tilt, HVAC methods and other areas.
- Improve alignment with existing CBRE PJM office cost reports.
- Establish a CBRE industrial cost index by market.
- Explore expanding beyond the 15 U.S. markets selected for this report.
- Target a minimum of five budgets per market to ensure adequate sampling and a more accurate central tendency.

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APPENDIX

Construction Cost Drivers

Construction costs are primarily driven by three main factors:

Margins, Input Prices & Labor Costs

Each factor has unique challenges but impacts are interrelated. Disruption in one factor can cause challenges in others.

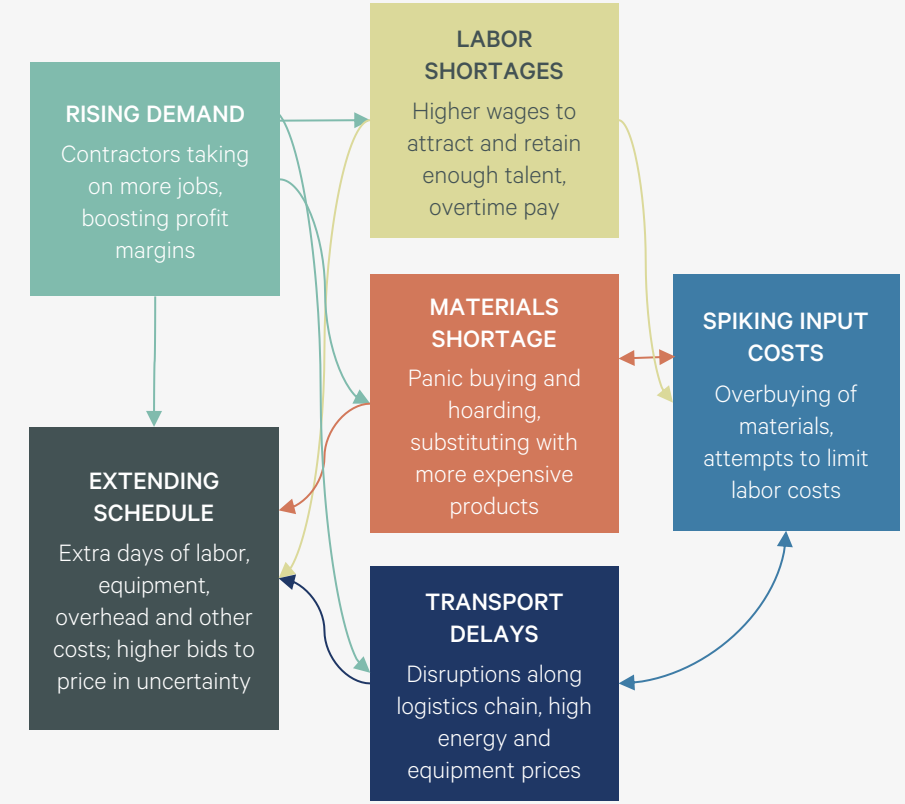
Over the past few years, the construction sector has been disrupted by intense demand for new buildings amid pandemic-fueled supply chain challenges and a historically tight labor market. Tenant demand for space spurred developers to build warehouse facilities at a historic pace, increasing materials and labor demand while both were already in short supply.

A slowdown in goods moving through U.S. seaports further exacerbated materials shortages. The transportation and logistics sector faced its own labor shortage challenges and moving goods across the U.S. by freight became more costly and time-consuming. Extended construction schedules increased costs and higher contractor and subcontractor prices.

Though some challenges have persisted, most of these factors have improved throughout 2023, slowing the rate of industrial construction cost inflation.

This section details how each key factor drove construction cost inflation since the pandemic, as well as how these factors will influence cost this year.

FIGURE 13: Interconnected Construction Cost Drivers



Source: CBRE Strategic Investment Consulting

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Margins

Construction Activity & Demand

Margin is the difference between the cost of providing construction-related goods and services and how much one is paid for them (i.e., profit). This is primarily influenced by a market's demand for new space relative to its activity volume.

Unlike other commercial property types, occupier demand for industrial space significantly increased during the pandemic. Developers responded with many new construction projects. This required hiring more industrial construction contractors and subcontractors, leading to rising prices for these services. Contractors can expand and contract operations to meet demand but adding staff and equipment takes time, depending on the availability of labor and other inputs. As excess demand led to limited contractor capacity, available contractors were able to charge more, especially in the highest-activity markets.

A more balanced supply-and-demand equilibrium was reached in 2023. Demand from developers slowed while contractors became better able to scale staff and obtain the necessarily materials and equipment. This has decreased contractor fees and the impact of margins on the inflation rate has slowed substantially.

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A boom in e-commerce sales helped fuel a new space race for growing occupiers.

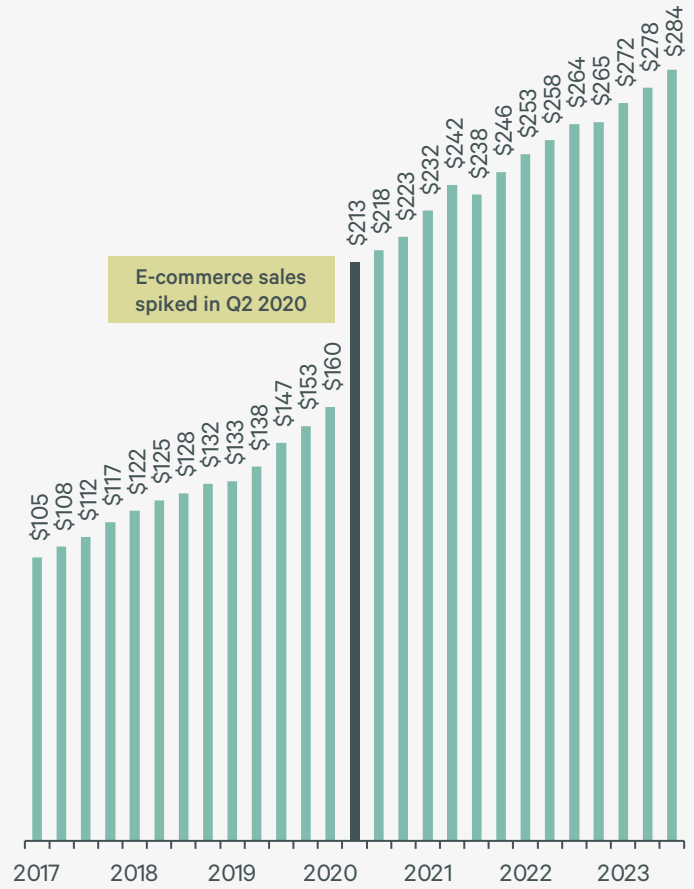
Industrial occupiers have been absorbing as much space as possible, even beyond their immediate needs, because fixed facilities costs (i.e., rent) are a relatively small share of logistics costs.

Occupiers expanded despite soaring real estate costs because this enabled them to decrease transportation and inventory costs. Transportation and inventory costs primarily drive overall logistics costs, while facilities costs (including rent) are only 3% to 6% of total logistics spending.

Over the past few years, demand has largely been driven by e-commerce growth, inventory control and the need for supply chain resiliency. The pandemic fueled significantly more e-commerce usage, including among new users. This created a need for more warehouse space because e-commerce requires about three times more industrial space than traditional retail for multiple reasons: accommodating pick-and-pack and online returns (reverse logistics), holding more inventory to mitigate risk and, as previously noted, reducing transportation costs.

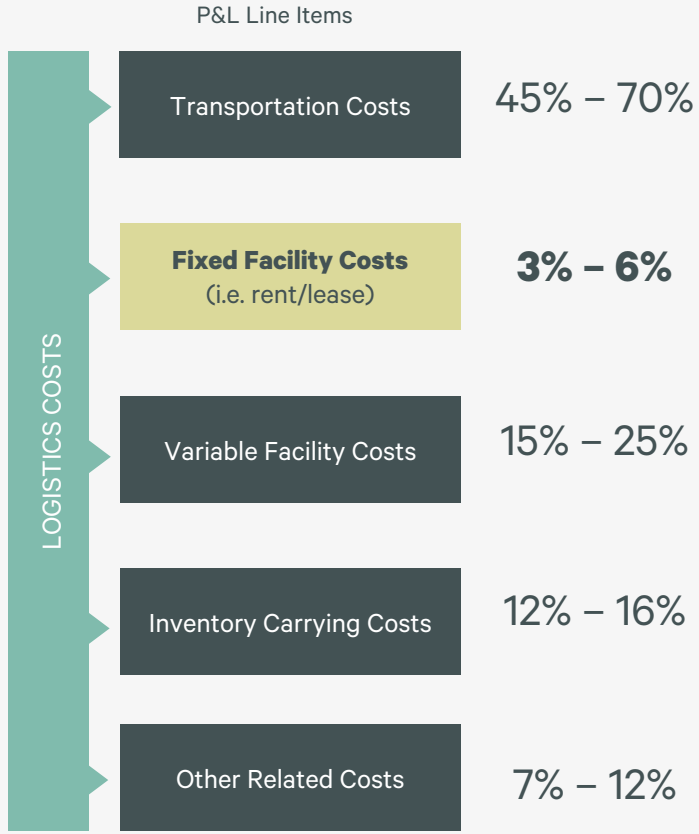
Warehouse space demand from occupiers will decrease as both online and physical retail sales are expected to slow over the next few years due to weaker economic growth, higher borrowing costs and depleted personal savings. This includes demand for new construction. Both online and physical retailers have indicated that they hold significantly more stock on-hand to mitigate future supply shortages and disruptions. But slowing sales will lead to less occupier concern over inventory control.

FIGURE 14: Total U.S. E-Commerce Sales ($ Billions)



Source: U.S. Census Bureau, Data through Q3 2023

FIGURE 15: Breakdown of a Company's Logistics Costs



Source: CBRE Supply Chain Consultancy, 2023

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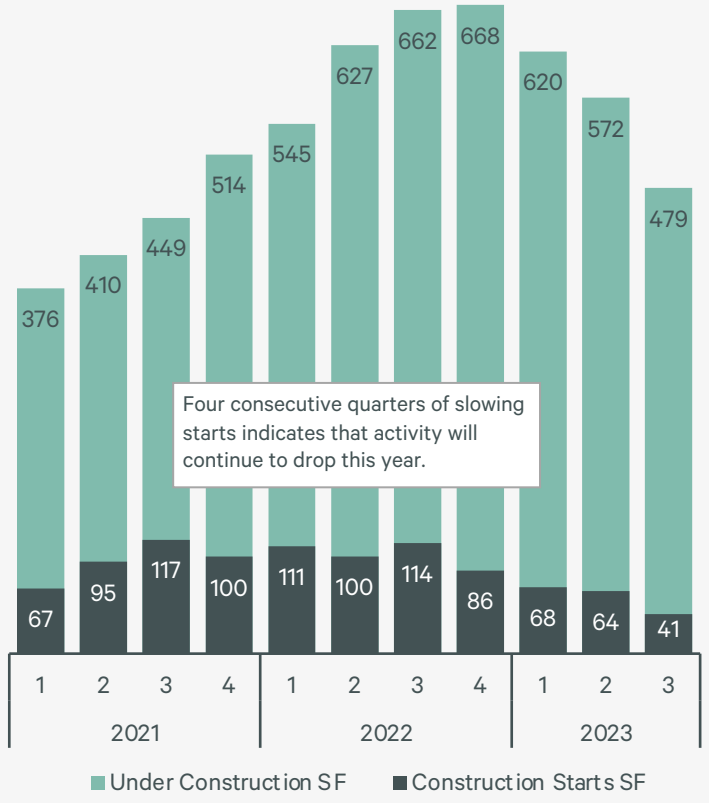
Industrial construction activity spiked more than other commercial types during the pandemic.

As projects deliver and space availability rises in most markets, developers are starting fewer new projects.

Higher materials costs and slowing tenant demand are causing many developers to decrease activity. Additionally, construction financing has been a challenge for developers as lenders tighten standards and raise borrowing costs. In 2022, U.S. developers broke ground on approximately 100 million sq. ft. of industrial real estate every quarter. By Q4 2022, 668 million sq. ft. was under construction, more than double the amount underway at the end of 2020. This pace has significantly slowed to an average of 57 million sq. ft. per quarter in 2023.

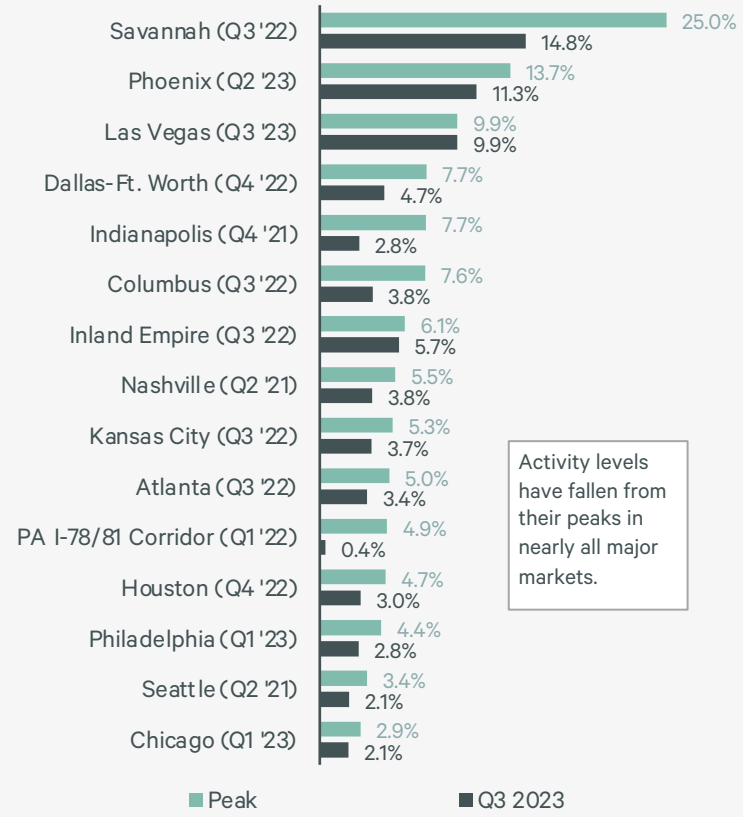
About 1% to 3% of an average U.S. market's existing industrial inventory was under construction leading into the pandemic, and activity has varied widely among the 15 markets in this report since then. For example, Savannah, GA grew quickly before the pandemic but reached 25% of inventory under construction in Q3 2022. It remains well-above its pre-pandemic pace. Other Sun Belt markets like Phoenix, Las Vegas, NV and Dallas have been and remain very active, while coastal and Midwest markets like Seattle, Philadelphia and Chicago saw less activity. Apart from Las Vegas, NV, all 15 markets are past their activity peak and most should further slow over the next two years.

FIGURE 16: Total Industrial Sq. Ft. (Millions) Under Construction and Started in the U.S.



Source: CBRE Research, Data through Q3 2023

FIGURE 17: Share of Inventory Under Construction by Market



Note: Parentheses indicate quarter of peak activity from 2020-2023

Source: Costar Group, CBRE Strategic Investment Consulting, Data through Q3 2023

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Input Prices

Materials/Equipment Costs, Energy Prices & Supply Chains

High demand amid intense supply chain pressures caused a spike in prices and lead times for key materials and equipment.

In 2021, a confluence of global events, transportation trends and trade policies led to widespread supply chain disruption and price inflation in the U.S. Construction was one of the hardest-hit sectors during this period due to its reliance on key imports like steel and the need to transport large, heavy materials across long distances. At its peak in March 2022, the Producer Price Index for general freight trucking in the U.S. was 55% higher than at the start of 2020.

Supply conditions have generally improved since early 2022. As of October, the freight index has fallen to 12% above its pre-pandemic price. The Federal Reserve Bank of New York's Global Supply Chain Pressure Index (GSCPI), a measure that uses transportation cost and manufacturing indicators to estimate the state of the global supply chain, shows conditions generally returned to their historic norm in early 2023.

These conditions have brought lead times for most key materials back to the pre-pandemic norm, while price inflation for most inputs has stabilized. However, some key inputs are still taking longer to procure so their prices continue to more rapidly increase, putting continued cost pressures on warehouse construction.

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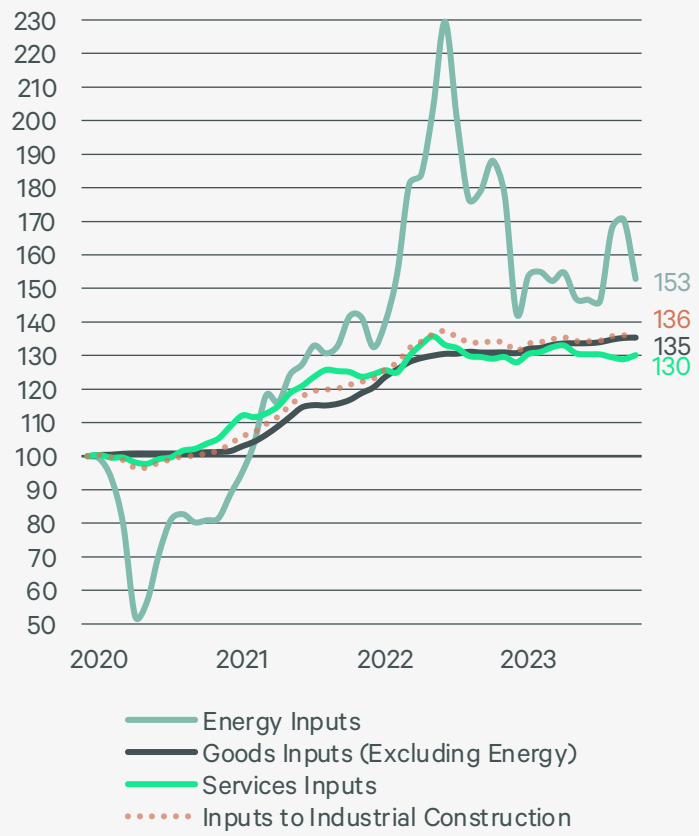
Price inflation for most key materials is beginning to settle.

Goods are the bulk of warehouse construction inputs. The most important ones are concrete and precast/tilt, structural steel, HVAC and electrical equipment.

While concrete and precast/tilt prices trended generally with the aggregate of inputs through most of the pandemic, prices have been spiking more aggressively in the past year (Figure 19). Concrete prices can vary more by region than other materials because it tends to be sourced from local producers. According to the U.S. Bureau of Labor Statistics, ready-mix concrete prices have risen in the Midwest by 18.9% year-over-year as of October, compared to just 5.7% in the West. Steel products are up more than most other key materials since 2019, but prices have generally been falling over the past year. HVAC and electrical equipment vary by material, but prices are generally rising more aggressively than other materials and are often in the shortest supply.

Energy has been by far the most volatile input, peaking in June 2022 when prices were up by 130% from December 2019. Since then, prices have fallen dramatically but remain well-above their pre-pandemic level. Energy costs make up about 10% of goods inputs and most of this is from diesel and unleaded gasoline. While prices for these products spiked in the summer of 2023, they have since fallen and are down by 14% year-over-year as of October.

FIGURE 18: Producer Price Index Inputs to Industrial Construction by Type (Dec 2019 = 100)



Source: BLS, CBRE Strategic Investment Consulting, Data through Oct 2023

FIGURE 19: Change in Producer Price Index by Key Industrial Construction Material

Material	YoY Change Oct '22-Oct '23	Pandemic Change Oct '19-Oct '23
Concrete & Precast		
Precast concrete architectural wall panels	5.2%	44.4%
Ready-mix concrete	11.3%	34.0%
Electrical Products		
Transformers and power regulators	3.1%	65.2%
Wiring devices	6.4%	55.4%
Switchgear, switchboard, etc.	6.3%	39.2%
Electric lamp bulbs, tubes, & components	7.6%	19.9%
Structural Steel & Misc Metals		
Steel & aluminum parts for prefab	-2.4%	50.8%
Steel & aluminum fences and openings	-2.6%	50.5%
Hot rolled steel bars, plates, and shapes	-10.3%	48.3%
Fab structural iron & steel for ind bldgs	-2.2%	41.0%
Other Key Shell Components		
Air conditioning and refrigeration equip	3.9%	45.9%
Unlaminated vinyl/copolymer film/sheet	-4.6%	49.0%
Thermoplastic resins and plastics	-12.1%	18.3%

Source: BLS, CBRE Strategic Investment Consulting, Data through Oct 2023

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Labor Costs

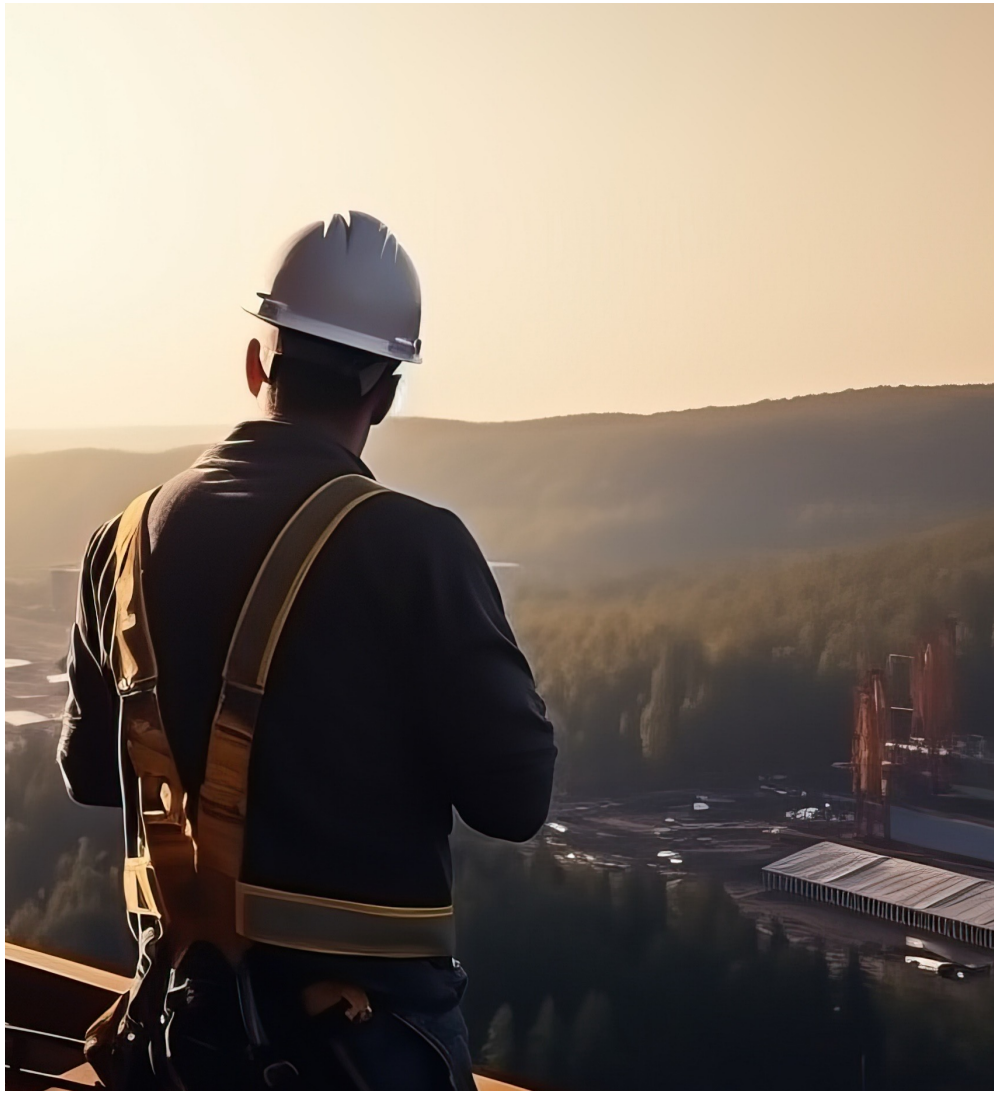
Wages & Worker Availability

As demand grew, a major tightening of the labor market across all sectors made it especially challenging and costly to hire more construction labor.

Like most sectors of the U.S. economy, construction unemployment soared in early 2020 when projects were halted and the economy was responding to the COVID-19 public health crisis.

As business and construction progressively resumed in late 2021 and into 2022, demand for labor soared but many were slow to return to the labor force. In order to draw people back, as well as draw new talent from other sectors, construction employers were raising wages and other benefits. During this period, logistics and distribution companies were booming, further adding competition for construction laborers and other workers.

The lack of apprenticeships and degree/certification awards in key construction trades has also been a longer-term issue in the construction sector that continues to put pressure on wages for these types of jobs. Additionally, union contracts have disrupted the timing of pay increases in many markets, meaning some areas will see sharper increases in the coming years to make up for lost pay over the past few years.



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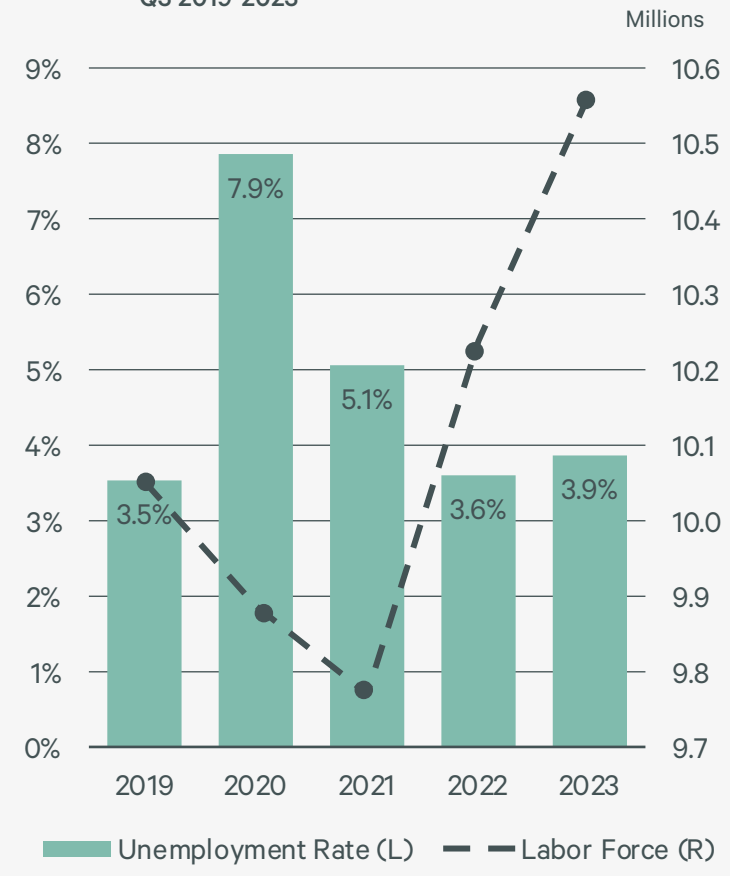
The construction labor force is improving, but wage growth is at its peak since the onset of the pandemic.

After unemployment peaked in 2020, construction employers attempted to quickly re-hire workers but the labor force was slow to rebound, putting upward pressure on wages.

Construction wages grew about 2% to 3% per year before the pandemic but began spiking in 2021. Employers had to compete over a limited labor pool. Wage increases have been even higher in the nonresidential building sector, especially in 2023. Despite wage growth slowing in the construction sector more broadly last year, nonresidential building construction wages increased by 6.6% from Q1 through Q3 2023 (compared to 4.6% for the same period in 2022).

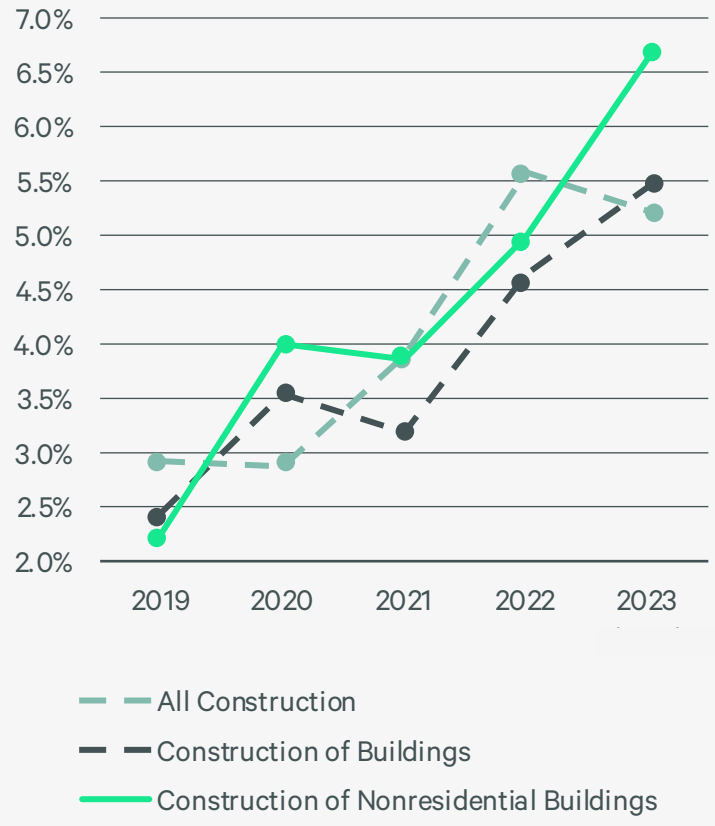
The construction labor force has been steadily growing over the past two years and its unemployment rate is beginning to rise slightly, which should ease some wage pressure. However, large infrastructure projects and other construction are keeping demand for labor elevated. The pace of construction wage growth is unlikely to slow substantially this year.

FIGURE 20: Construction Unemployment Rate & Labor Force, Q3 2019-2023



Source: US Bureau of Labor Statistics, Data through Q3 2023

FIGURE 21: Y-o-Y Change (%) in Average Hourly Wage by Construction Subsector



Source: US Bureau of Labor Statistics, 2023 data through October

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