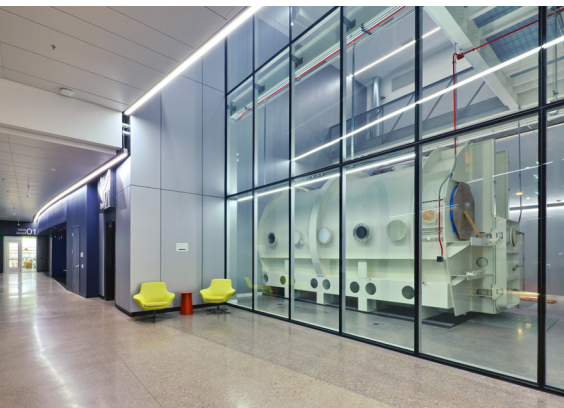


FOURTH QUARTER 2023

NORTH AMERICA

QUARTERLY CONSTRUCTION COST REPORT





UNIVERSITY OF ARIZONA APPLIED RESEARCH BUILDING ▲ TUCSON, ARIZONA

The new Applied Research Building is an 89,000-square-foot building with state-of-the-art facilities including high bay areas, laboratories, and clean rooms. The building houses advanced research equipment such as Thermal Vacuum Chamber, Anechoic Chamber, and Additive Manufacturing laboratory. The ARB allows students and faculty from many departments to advance their research in several disciplines.

Built and designed by McCarthy and SmithGroup, the Applied Research Building is dedicated to cutting-edge research programs in areas like disease prevention, artificial intelligence, and space exploration. Undergraduate and graduate students alike can conduct specialized research within the building's revolutionary facilities. The ARB also keeps the University of Arizona at the forefront of space science with an integration center for satellites and spacecrafts.

RLB provided cost consultancy services at critical design milestones for the University of Arizona Applied Research Building. RLB's unique strategy provided for open and consistent dialogue with the University of Arizona and its design-build contractor from the start, allowing the project to stay on schedule.

RLB always aims to ensure absolute satisfaction from all parties involved in a project. The University of Arizona Applied Research Building is a demonstration of RLB's precision in cost estimation and dedication to a successful outcome.

NORTH AMERICA AT A GLANCE

Q4 2023

The construction industry has been feeling a lot like the weather recently. Experts provide long-term forecasts that allow us to plan and make informed decisions for our projects. In the construction industry, we've been weathering a storm of economic uncertainty that is stubbornly stuck over the entire U.S. Just when we think we see a break in the clouds and see brighter times ahead, the clouds move right back, leaving no perceivable clearing in sight. Keeping a close eye on our forecasts and staying steady through this continued uncertainty is essential as the start of 2024 has us working to maintain our focus to get through these uncertain times and get us to brighter days.

One bright spot we've seen recently is that the overall construction industry has remained remarkably resilient despite higher borrowing costs, inflation, and workforce challenges. Construction put in place is up 0.6 percent, with infrastructure projects leading that growth, while commercial construction declined 1.5 percent, and multifamily housing has come down from record highs.

Conversely, we see a downward trend in another key indicator — the Architectural Billing Index. The index dropped to 44.3 in October 2023, suggesting a decrease in architecture billings. Billings were soft across the country, with firms in both the West and Northeast seeing the softest conditions. While many firms are reporting a robust backlog, as we move into 2024, we will likely see the implications of this downward trend.

Interest rates and financing constraints have slowed construction starts over the last quarter. We'll want to keep an eye on interest rates as we start 2024 and the potential for continued slowing of construction starts. While many projects will proceed, we anticipate seeing an influx of cost-cutting measures as a response to inflation, so they can still move forward.

Labor continues to be shrouded in a dark cloud as the most recent job opening numbers show a record 450,000 openings in the construction industry for the last reported month and unemployment at 3.8 percent. However, akin to finance costs and interest rates, labor shortages are not prohibiting construction projects from moving forward.

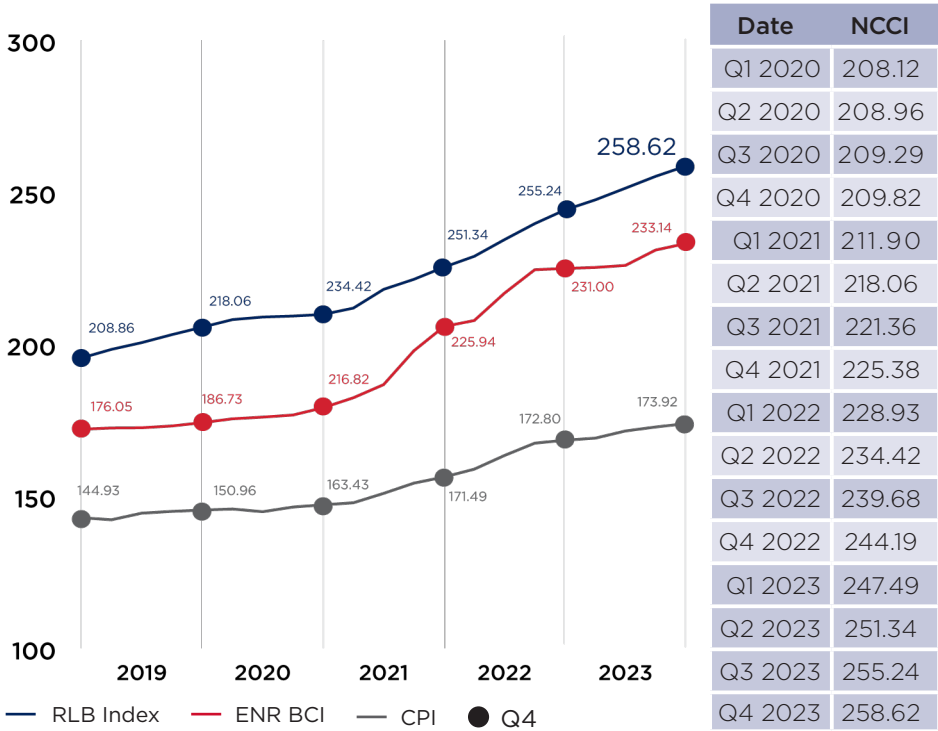
We have about as much control over the economy as we do the weather. What we do have control of, however, is how we choose to weather the storm. I believe the best way to do this is by being in-the-know so that you can make informed decisions on your projects.

Paul Brussow
President,
North America



UNITED STATES

NATIONAL CONSTRUCTION COST INDEX



Welcome to the fourth quarter 2023 issue of the RLB Quarterly Cost Report! This issue contains data current to mid-Q4 2023.

\$2,027.1
billion

According to the U.S. Department of Commerce, construction-put-in-place during October 2023 was estimated at a seasonally adjusted annual rate of \$2,027.1 billion, which is

0.6%
above

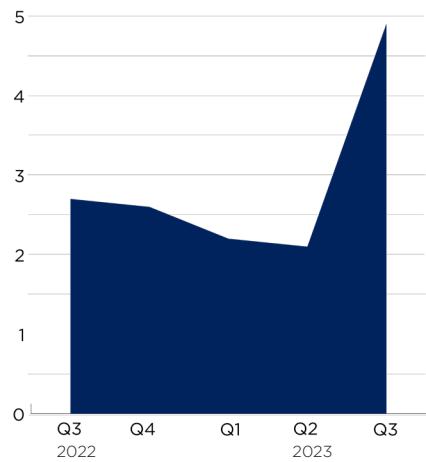
the revised September 2023 estimate of \$2,014.7 billion, and

10.7%
above

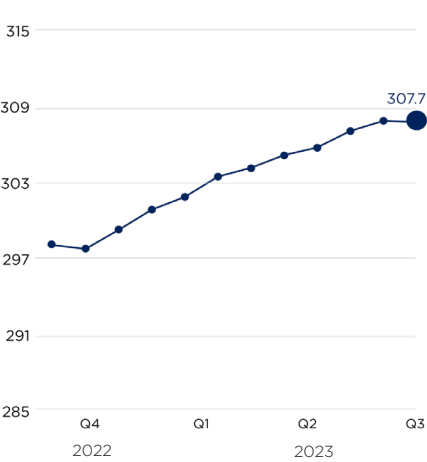
the October 2022 estimate of \$1,830.5 billion.

KEY UNITED STATES STATISTICS

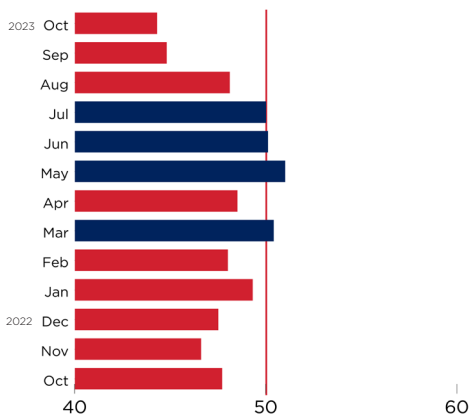
Gross Domestic Product* (GDP)



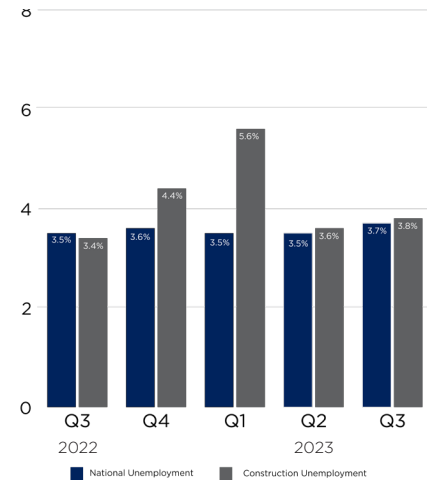
Consumer Price Index (CPI)



Architectural Billings



Unemployment Comparison



GDP represented in percent change from the preceding quarter, seasonally adjusted at annual rates. CPI quarterly figures represent the monthly value at the end of the quarter. Inflation rates represent the total price of inflation from the previous quarter, based on the change in the Consumer Price Index. ABI is derived from a monthly American Institute of Architects survey of architectural firms of their work on the boards, reported at the end of the period. Construction Put-in-Place figures represent total value of construction dollars in billions spent at a seasonally adjusted annual rate taken at the end of each quarter. General Unemployment rates are based on the total population 16 years and older. Construction Unemployment rates represent only the percent of experienced private wage and salary workers in the construction industry 16 years and older. National unemployment rates are seasonally adjusted, reflecting the average of a three-month period.

* Adjustments made to GDP based on amended changes from the Bureau of Economic Analysis.

Sources: U.S. Bureau of Labor Statistics, Bureau of Economic Analysis, American Institute of Architects.

UNITED STATES

INDICATIVE CONSTRUCTION COSTS

LOCATION	OFFICES				RETAIL SHOPPING				HOTELS				HOSPITAL	
	PRIME		SECONDARY		CENTER		STRIP		5 STAR		3 STAR		GENERAL	
	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH
USA														
Boston	400	650	245	355	220	325	165	260	435	635	300	425	500	1000
Chicago	315	525	190	315	190	420	155	260	470	735	345	470	400	840
Denver	350	500	250	350	200	350	160	230	425	625	285	425	600	800
Honolulu	350	585	220	340	270	565	250	425	665	810	385	610	515	870
Las Vegas	260	450	180	245	155	615	140	335	400	745	240	405	510	610
Los Angeles	250	375	190	280	170	365	145	210	400	620	290	380	640	970
New York	380	880	220	550	330	660	350	690	475	710	350	475	595	895
Phoenix	245	415	155	220	195	330	115	190	390	610	205	310	470	665
Portland	275	365	250	340	260	360	225	300	465	610	340	450	700	1000
San Francisco	430	740	330	530	315	520	240	410	550	820	390	650	600	950
Seattle	340	610	230	320	255	410	195	315	450	685	320	450	600	850
Washington	335	555	230	365	180	325	150	245	430	650	280	440	510	885
CANADA														
Calgary	275	415	235	280	230	310	140	195	300	465	225	255	670	910
Toronto	290	470	240	335	215	455	175	225	415	770	250	300	605	945

DODGE MOMENTUM INDEX VS. RLB NCCI

The bar chart to the right is the Dodge Data & Analytics 'Momentum Index' (DMI). This index is a monthly measure of the initial report for nonresidential building projects in planning that has been shown to lead construction spending for non-residential buildings for a full year.

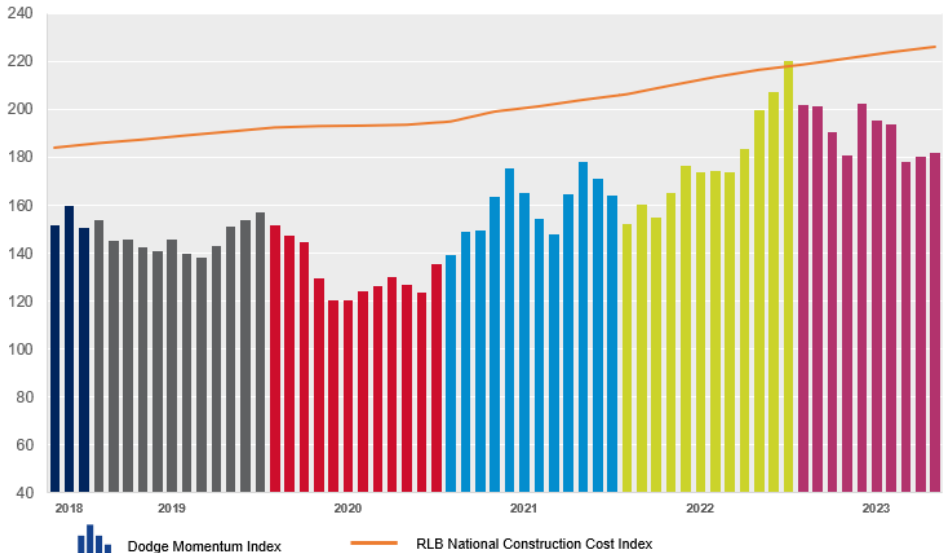
The orange line above the bar chart is RLB's National Construction Cost Index (NCCI) (see page 2 of the QCR). The NCCI represents the average escalation of costs across U.S. 12 cities, representing the hypothetical change in bid pricing across cities measured that quarter

The DMI rose in October because of increased commercial activity. It was the second consecutive month of growth following three months of declines. The DMI was 8 percent below what it was at this time last year. On a year-over-year basis RLB's NCCI climbed 5.9 percent from 244.19 to 258.62. This means the NCCI is trending downward from 8.3 percent a year earlier.

Many nonresidential projects with a \$100 million or more budget entered the planning stages in October. Although the commercial segment is likely to continue to be negatively impacted by persistently high-interest rates, bottlenecks in the supply chain, and stricter lending standards, the DMI indicates that overall planning activity remains strong, which will support construction spending over the next 12 to 18 months.

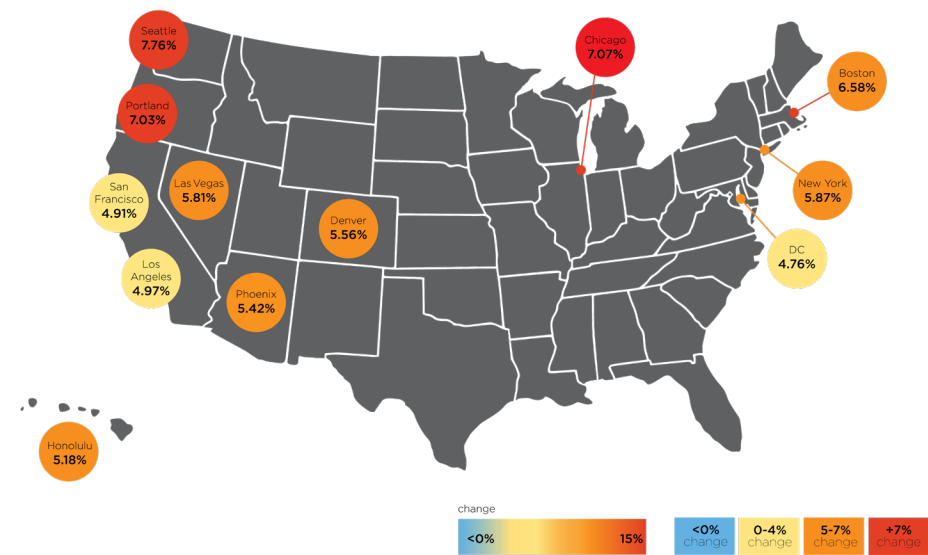
The data in the chart below represents estimates of current building costs in each respective market. Costs may vary as a consequence of factors such as site conditions, climatic conditions, standards of specification, market conditions, etc. Values of U.S. locations represent hard construction costs based on U.S. dollars per square foot of gross floor area, while values of Canadian locations represent hard construction costs based on Canadian dollars per square foot.

INDUSTRIAL		PARKING				RESIDENTIAL				EDUCATION					
WAREHOUSE		GROUND		BASEMENT		MULTI-FAMILY		SINGLE-FAMILY		ELEMENTARY		HIGH SCHOOL		UNIVERSITY	
LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH
120	205	95	155	125	175	250	350	285	395	400	550	450	700	500	750
130	215	90	135	145	260	190	440	265	525	295	440	335	470	415	840
125	195	125	200	165	250	185	355	230	465	310	475	400	575	550	800
125	260	150	200	170	280	270	460	300	565	515	850	530	725	660	975
80	150	80	105	100	180	190	455	225	450	415	520	495	675	640	850
130	200	110	135	150	205	245	400	215	380	380	500	325	575	480	650
130	220	110	190	150	230	230	450	330	660	505	640	550	700	540	775
80	140	55	105	85	150	175	270	185	505	275	390	305	470	415	640
200	285	200	240	220	295	275	385	250	395	440	550	475	610	525	675
150	255	130	205	250	350	400	625	310	520	390	570	440	750	570	1000
170	235	125	190	200	290	265	450	245	375	415	625	350	625	550	750
130	210	70	95	90	155	210	355	265	390	325	440	340	465	420	710
110	165	90	125	95	150	190	265	290	420	250	345	255	355	330	505
130	180	120	155	150	215	250	320	315	620	265	325	265	345	305	535



UNITED STATES

COMPARATIVE COST INDEX



City	October 2022	January 2023	April 2023	July 2023	October 2023	Annual % Change
• Boston	28,192	28,741	29,165	29,574	30,048	6.58%
• Chicago	28,718	28,947	29,595	30,103	30,749	7.07%
• Denver	18,004	18,236	18,632	18,898	19,005	5.56%
• Honolulu	28,802	29,106	29,402	29,895	30,293	5.18%
• Las Vegas	17,777	17,932	18,289	18,583	18,809	5.81%
• Los Angeles	26,238	26,585	26,929	27,263	27,541	4.97%
• New York	32,986	33,456	33,924	34,496	34,922	5.87%
• Phoenix	18,693	18,993	19,253	19,503	19,706	5.42%
• Portland	20,631	20,949	21,263	21,741	22,081	7.03%
• San Francisco	33,115	33,679	34,202	34,425	34,741	4.91%
• Seattle	23,239	23,641	23,991	24,651	25,042	7.76%
• Washington, DC	26,615	26,857	27,169	27,428	27,883	4.76%

Comparative Cost Map Indicates percentage change between October 2022 to October 2023.

INTRODUCING

SECTOR MARKET INSIGHTS

*A Companion to the QCR
Providing a Expert Insights and
Construction Cost Drivers
Impacting the Future of the Sector.*



WHAT IS A SECTOR MARKET INSIGHT?

A companion to the Quarterly Cost Report, our sector market insight offers clients the certainty they need to make critical, real-time decisions to ensure the commercial success of their aviation projects.

The sector market insight takes a deep dive into:

- state of the market,
- what cost drivers are likely to affect material prices,
- industry trends, and
- what information like this means for the future of the sector.

What sectors are included?

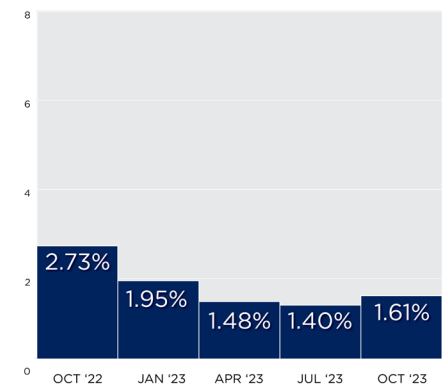
The Sector Market Insights will feature Aviation, Convention Centers, Data Centers, Healthcare, Hotels & Leisure, Infrastructure, Sports & Events, and Federal/Government. For Q4 2023, we'll be highlighting:



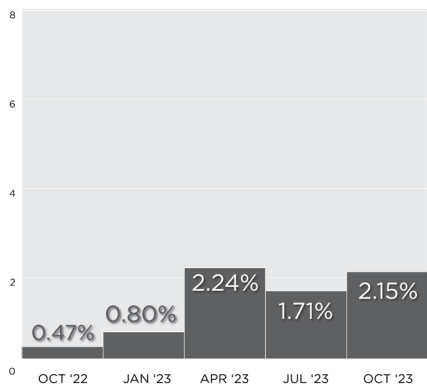
FEDERAL/
GOVERNMENT

UNITED STATES

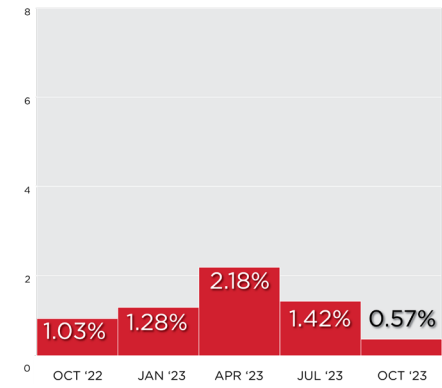
The following escalation charts track changes in the cost of construction each quarter in many of the cities where RLB offices are located. Each chart illustrates the percentage change per period.



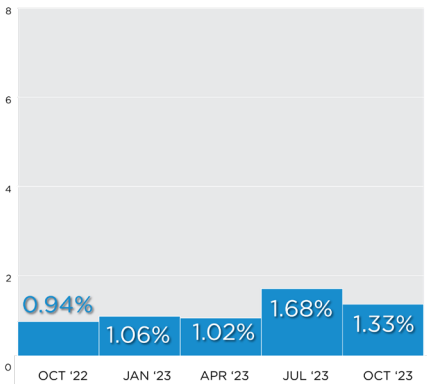
Boston Cost Index



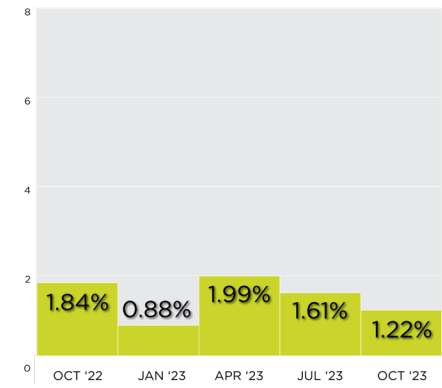
Chicago Cost Index



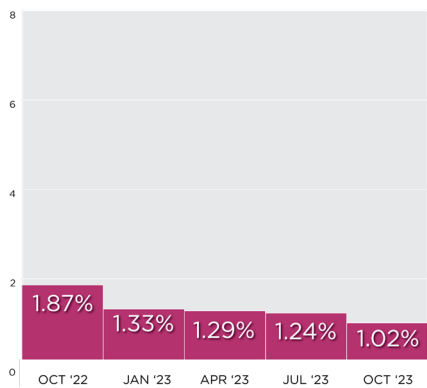
Denver Cost Index



Honolulu Cost Index

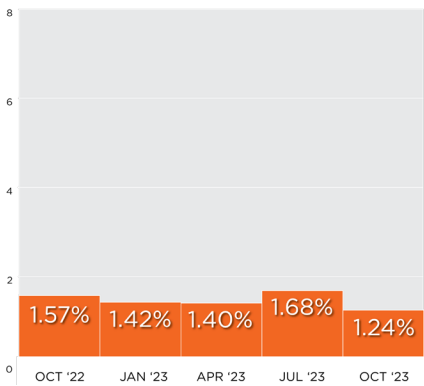


Las Vegas Cost Index

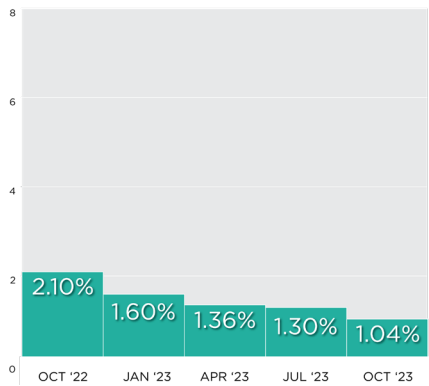


Los Angeles Cost Index

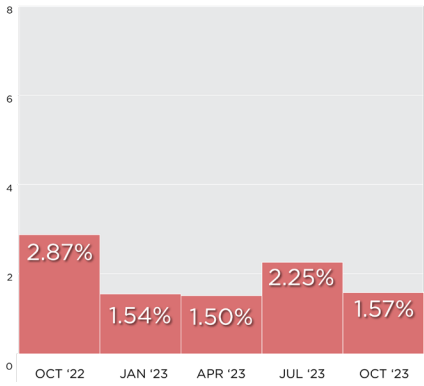
Our research suggests that between July 1, 2023 and October 1, 2023 the national average increase in construction cost was 1.32% (5.28% annualized). Boston, Chicago, Honolulu, Portland, Seattle and Washington, D.C all experienced increases above the quarterly national average during Q3 2023. Locations below the national average included Denver, Las Vegas, Los Angeles, New York, Phoenix, and San Francisco.



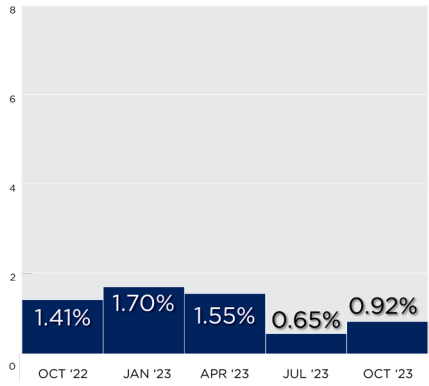
New York Cost Index



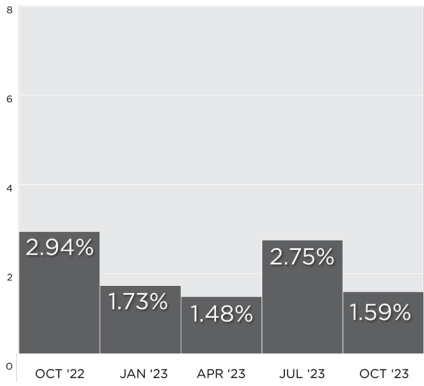
Phoenix Cost Index



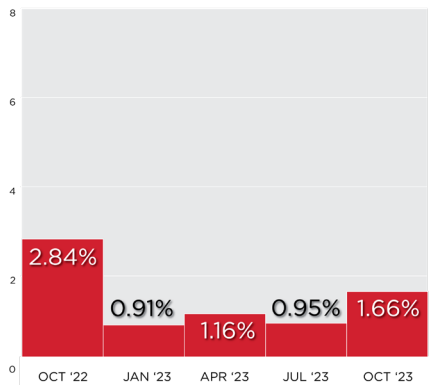
Portland Cost Index



San Francisco Cost Index



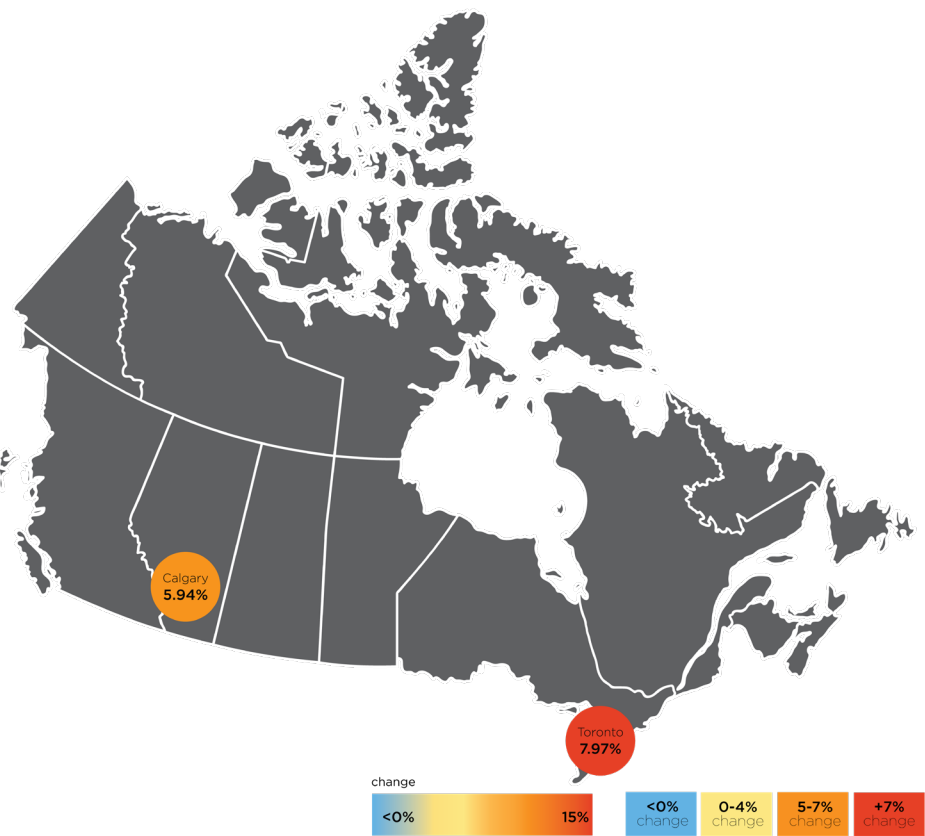
Seattle Cost Index



Washington DC Cost Index

CANADA

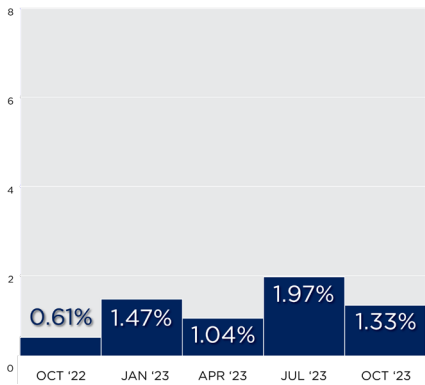
COMPARATIVE COST INDEX



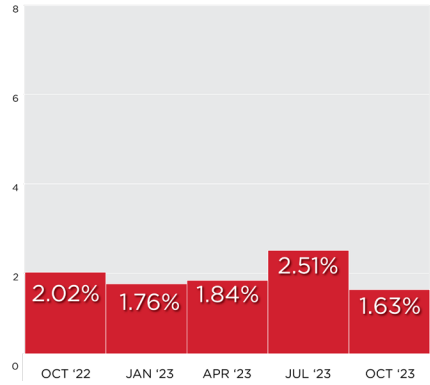
City	October 2022	January 2023	April 2023	July 2023	October 2023	Annual % Change
• Calgary	24,123	24,477	24,732	25,220	25,555	5.94%
• Toronto	31,473	32,028	32,619	33,437	33,981	7.97%

Large capital projects in Calgary include the West Calgary Ring Road project, the Future Energy Park Renewable Natural Gas and Ethanol Project, and the Green Line Light Rail (LRT), with the total cost of \$8 billion. One of the proposed capital projects, Calgary Event Centre, is scheduled to start in Q1 2024 with the funding of \$1.2 billion. The city of Calgary reported a sustained year-over-year increase in housing projects in Q3 2023, compared to 2022. City officials indicated that applications for building permits were 25 percent more this year. Several residential projects, totaling approximately \$1.7 billion, are already underway or scheduled to begin between 2023 and 2024. These projects are being built in response to the city region's housing supply shortage.

In Ontario, the provincial government reported that the value of institutional permits increased from \$1.7 billion to \$3.1 billion in Q3 2023. The total amount of ICI permits issued so far this year has reached \$15.2 billion, a 26 percent increase over the same period in the previous year. It is anticipated that ICI's total building investment will rise by 22 percent by 2027. The provincial government is committed to funding \$184 billion for infrastructure over the next ten years, including major transportation projects in several of the province's biggest cities. Additionally, the Canadian government has announced a \$1.2 billion federal investment in seven new Toronto projects to build 2,644 rental homes through the Rental Construction Financing Initiative, as part of the solution for housing crisis.

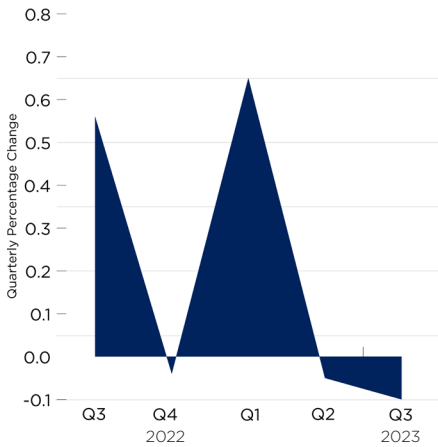


Calgary Cost Index

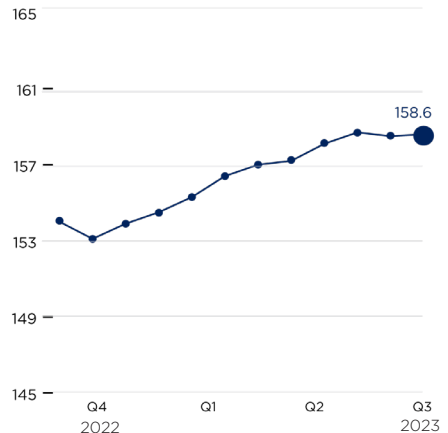


Toronto Cost Index

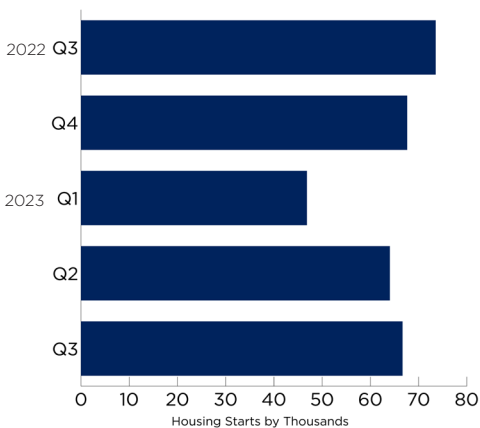
KEY CANADIAN STATISTICS



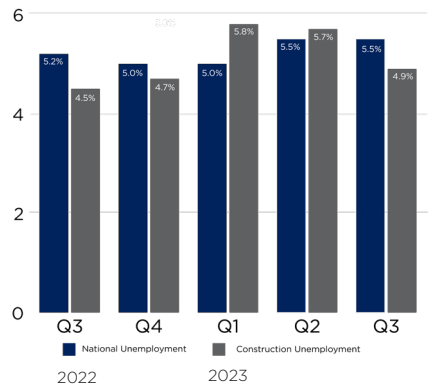
Gross Domestic Product* (GDP)



Consumer Price Index (CPI)



Housing Starts



Unemployment Comparison



ABOUT RIDER LEVETT BUCKNALL

Rider Levett Bucknall is an award-winning international firm known for providing project management, construction cost consulting, and related property and construction advisory services – at all stages of the design and construction process.

While the information in this publication is believed to be correct, no responsibility is accepted for its accuracy. Persons desiring to utilize any information appearing in this publication should verify its applicability to their specific circumstances.

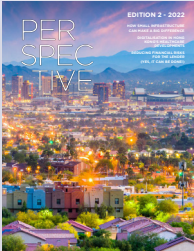
This issue was compiled and designed by Taryn Harbert and Kaylie Lu with contributions from Antonio Gonzalez, Cassie Idehara, Charlie Andrews, Daniel Junge, Evans Pomegas, James Casey, Julia Flores, Kirk Miller, Lucy Liu, Maelyn Uyehara, Paul Brussow, Paraic Morrissey, Peter Knowles, Peter Vavaroutsos, and Scott Macpherson.

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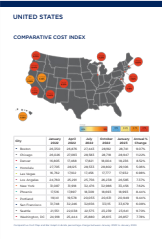
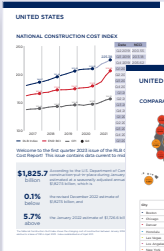
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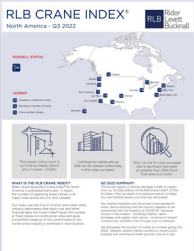
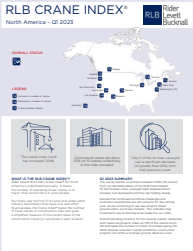
PERSPECTIVE



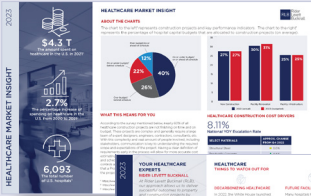
CONSTRUCTION COST REPORT



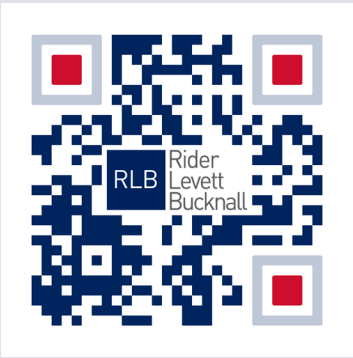
CRANE INDEX



SECTOR MARKET INSIGHTS



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