

NORTH AMERICA

QUARTERLY CONSTRUCTION COST REPORT

SECOND QUARTER 2017





ON THE COVER

COLGATE ICE ARENA HAMILTON, NEW YORK

In the fall of 2016, Colgate University formally opened The Class of 1965 Arena on its campus in Hamilton, New York.

Designed by Sasaki of Watertown, MA, the 2,222 seat, state-of-the-art facility will be the new home of the Colgate men's and women's ice hockey teams in addition to providing new locker rooms for The Raiders' men's and women's lacrosse and soccer teams.

RLB provided cost advisory services for the construction of this new athletic facility.

The ice surface in Colgate's Class of 1965 Arena will be known as Steven J. Riggs '65 Rink in honor of the former men's ice hockey team captain. Riggs was killed in combat in Vietnam in 1968 and was inducted posthumously into the Colgate Athletics Hall of Honor.

NORTH AMERICA

Heading into the summer months—high construction season here in North America—the industry remains robust. Cost escalation continues to trend significantly above the Consumer Price Index, in a reflection of the good times we’re currently experiencing in the field.

With labor shortages continuing, we have reason to believe it is limited in nature and easing somewhat. Once the effect of inflation on the value of construction put-in-place is calculated, it would appear that the increase in construction labor is still behind the up-turn in construction activity, but not as much as the raw numbers would suggest. In light of this, RLB sees the shortage as being specific to market sector, locale, and to particular trades. More worrying is the prospect that some of the shortage comprises under-skilled workers, which would reduce construction productivity at a time that the industry could use increased productivity.

On the topic of labor generally and the under-skilled sector in particular: In June, the President signed an executive order expanding federally funded apprenticeship programs, redirecting \$100 million to industry groups to develop retraining programs for trade workers that would be subject to approval by the Labor Department. At RLB, we would very much like to see similar support extended for careers in engineering, project management, and quantity surveying (construction cost management).

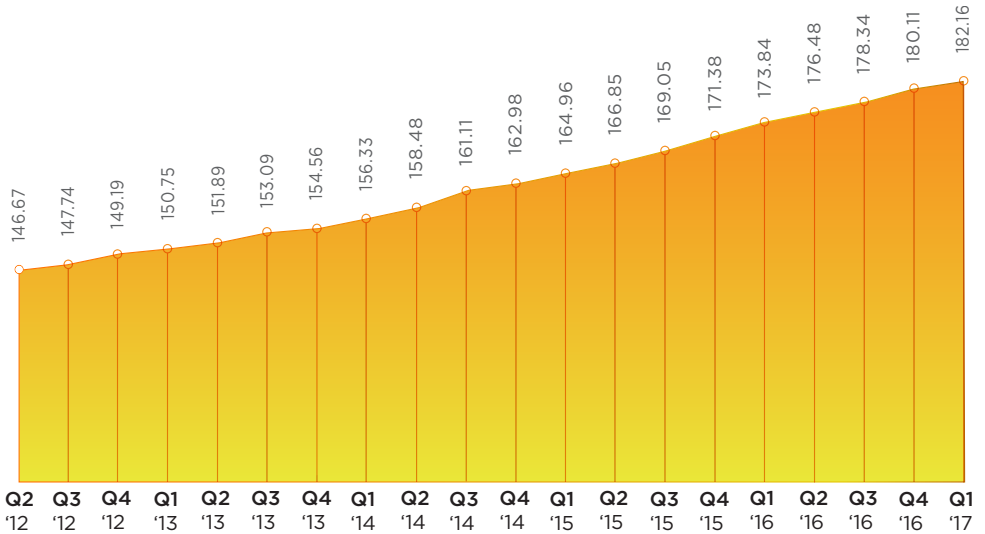
Regarding another proposed initiative, at the moment, the promised investment in national infrastructure has been shifted to individual states to fund and administer. With details of the program—which hinges on P3 partnerships—still sketchy, RLB is looking to Congress for action. While we wait for resolution on these matters, barring some external shock to the economy, we continue to expect a generally positive year for the construction industry.

As always, we at Rider Levett Bucknall thank you for your business and, more importantly, for your trust.



Julian Anderson FRICS
President

NATIONAL CONSTRUCTION COST INDEX



Welcome to the second 2017 issue of the Rider Levett Bucknall Quarterly Cost Report! This issue contains data current to April 1, 2017.

\$1,218.5 Billion According to the U.S. Department of Commerce, construction-put-in-place during April 2017 was estimated at a seasonally adjusted annual rate of \$1,218.5 billion, which is

1.4% below the revised March estimate of \$1,235.5 billion, and

6.7% above the April 2016 estimate of \$1,142.5 billion.

The National Construction Cost Index shows the changing cost of construction between January 2012 and January 2017, relative to a base of 100 in April 2001. Index recalibrated as of April 2011.

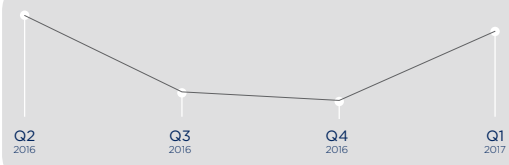
KEY UNITED STATES STATISTICS

Gross Domestic Product* (GDP)
 Coming down from 3.2% in the third quarter of 2016, GDP reports at 1.20% as the start of 2017.



Quarter	GDP Percent Change
Q2 2016	3.2%
Q3 2016	3.2%
Q4 2016	1.2%
Q1 2017	1.2%

Consumer Price Index (CPI)
 CPI experiences its first increase in over a year, up 1% from the fourth quarter of 2016.

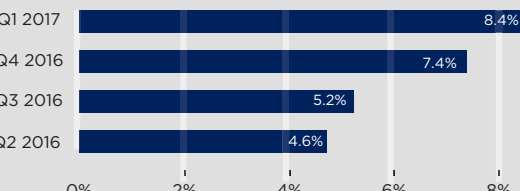


Quarter	CPI Percent Change
Q2 2016	1.2%
Q3 2016	0.2%
Q4 2016	0.2%
Q1 2017	1.2%

Architectural Billings Index (ABI)
 ABI is down from fourth quarter's reported billings but up from the 2016 average, indicating a healthy start to 2017.



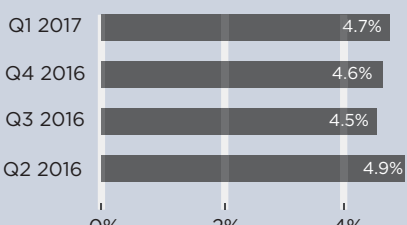
Quarter	ABI Value
Q2 2016	52.6
Q3 2016	48.4
Q4 2016	55.9
Q1 2017	54.3



Quarter	Construction Unemployment Rate
Q2 2016	4.6%
Q3 2016	5.2%
Q4 2016	7.4%
Q1 2017	8.4%

Construction Unemployment
 Construction unemployment continues to increase, starting out the year at 8.4%.

National Unemployment
 National unemployment remained relatively steady into 2017, varying from 4.9% to 4.7%.



Quarter	National Unemployment Rate
Q2 2016	4.9%
Q3 2016	4.5%
Q4 2016	4.6%
Q1 2017	4.7%

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. Unemployment rates are seasonally adjusted, reported at the end of the 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.

INDICATIVE CONSTRUCTION COSTS

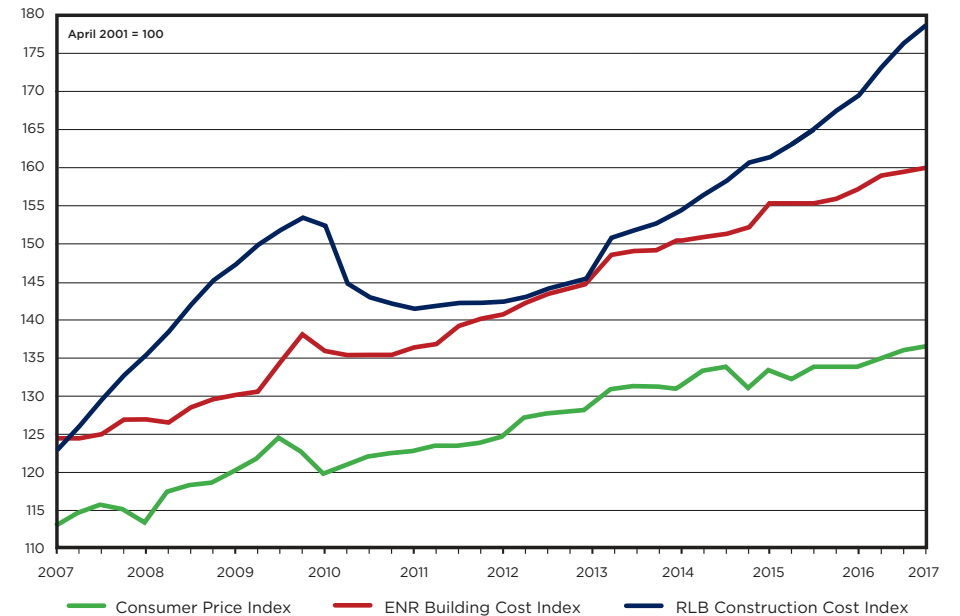
The data in the chart below represents estimates of current building costs in each respective market. Costs may vary as a consequence of factors such as site conditions, climatic conditions, standards of specification, market conditions, etc. Values of U.S. locations represent hard construction costs 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.

LOCATION	OFFICES				RETAIL SHOPPING				HOTELS				HOSPITAL		INDUSTRIAL		PARKING				RESIDENTIAL				EDUCATION					
	PRIME		SECONDARY		CENTER		STRIP		5 STAR		3 STAR		GENERAL		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	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH
USA																														
Boston	300	475	200	300	175	275	125	200	375	550	250	375	400	650	100	175	75	125	90	150	175	300	250	350	280	380	290	405	330	480
Chicago	280	450	175	280	185	280	135	220	390	650	270	390	360	630	110	185	80	125	90	155	160	340	220	420	250	380	300	380	345	480
Denver	160	255	115	175	90	145	70	135	200	310	150	185	370	455	90	150	50	70	90	120	85	190	90	400	245	300	260	310	285	400
Honolulu	285	530	245	400	210	495	175	435	515	745	325	545	475	760	145	225	100	145	140	265	195	445	280	760	340	475	405	610	445	720
Las Vegas	140	295	105	190	115	480	65	145	350	500	150	300	285	455	50	100	50	85	60	150	70	405	90	350	180	315	200	455	235	455
Los Angeles	220	340	160	245	145	325	115	180	350	515	250	325	470	700	105	175	100	120	125	170	180	290	190	335	335	445	355	480	385	550
New York	375	575	300	400	275	425	175	300	400	600	300	400	475	700	115	200	95	175	125	200	200	375	275	400	295	405	305	455	330	480
Phoenix	160	275	110	175	120	200	80	140	300	500	150	250	350	500	55	100	45	70	60	110	90	185	100	400	170	250	220	340	280	420
Portland	180	250	130	180	140	240	120	180	190	275	150	190	380	525	90	150	85	105	110	150	150	240	125	280	235	295	250	310	280	400
San Francisco	210	325	190	300	225	350	225	325	400	600	350	500	450	650	140	190	110	145	175	215	320	430	200	400	320	400	315	400	250	375
Seattle	200	250	145	200	135	305	110	155	240	330	220	235	385	530	95	125	90	110	130	160	150	250	165	285	250	300	275	465	315	465
Washington	275	425	200	300	150	275	125	175	350	525	250	350	400	650	90	150	70	125	80	125	175	300	250	350	280	355	280	380	330	480
CANADA																														
Calgary	235	295	190	285	220	310	110	160	300	450	190	245	75	95	85	145	550	720	75	120	140	215	125	315	185	260	220	310	300	450
Toronto	195	260	170	250	200	250	105	160	300	355	195	260	70	90	115	150	500	645	70	90	130	205	190	330	170	195	200	230	200	295

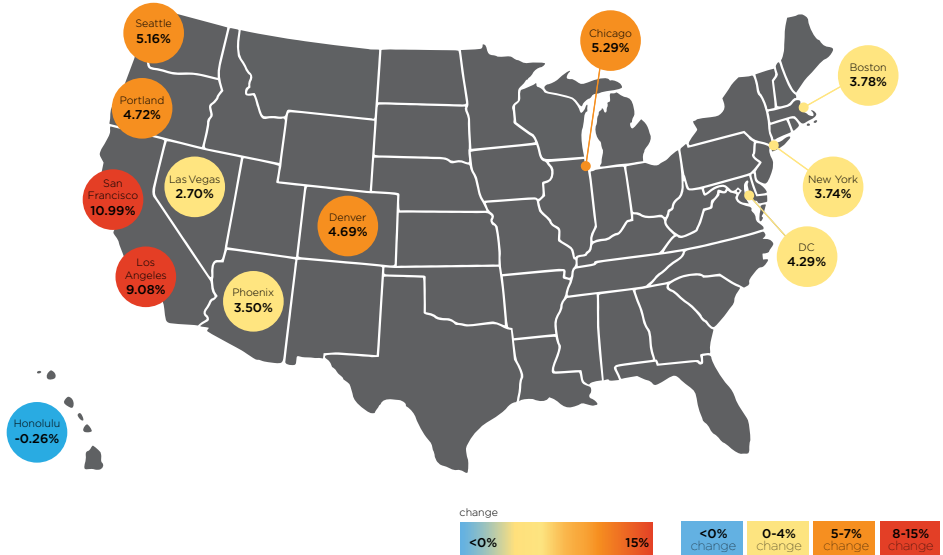
INFLATION INDEX COMPARISON

The chart on the following page demonstrates the relative differences in inflation between the cost of general goods and services (represented by the U.S. Bureau of Labor Statistics' Consumer Price Index), the cost of construction materials and labor (represented by Engineering News-Record's Building Cost Index) and the bid cost of construction (represented by Rider Levett Bucknall's National Construction Cost Index).

The distance between the cost of labor and materials (reflected in the ENR Building Cost Index) and the 'bid cost' (reflected in the RLB Index) indicates the relative health of the construction market; the bigger the gap, the more buoyant the construction industry. In times of recession, the gap usually closes up as contractors and sub-contractors cut overhead and profit to win work.

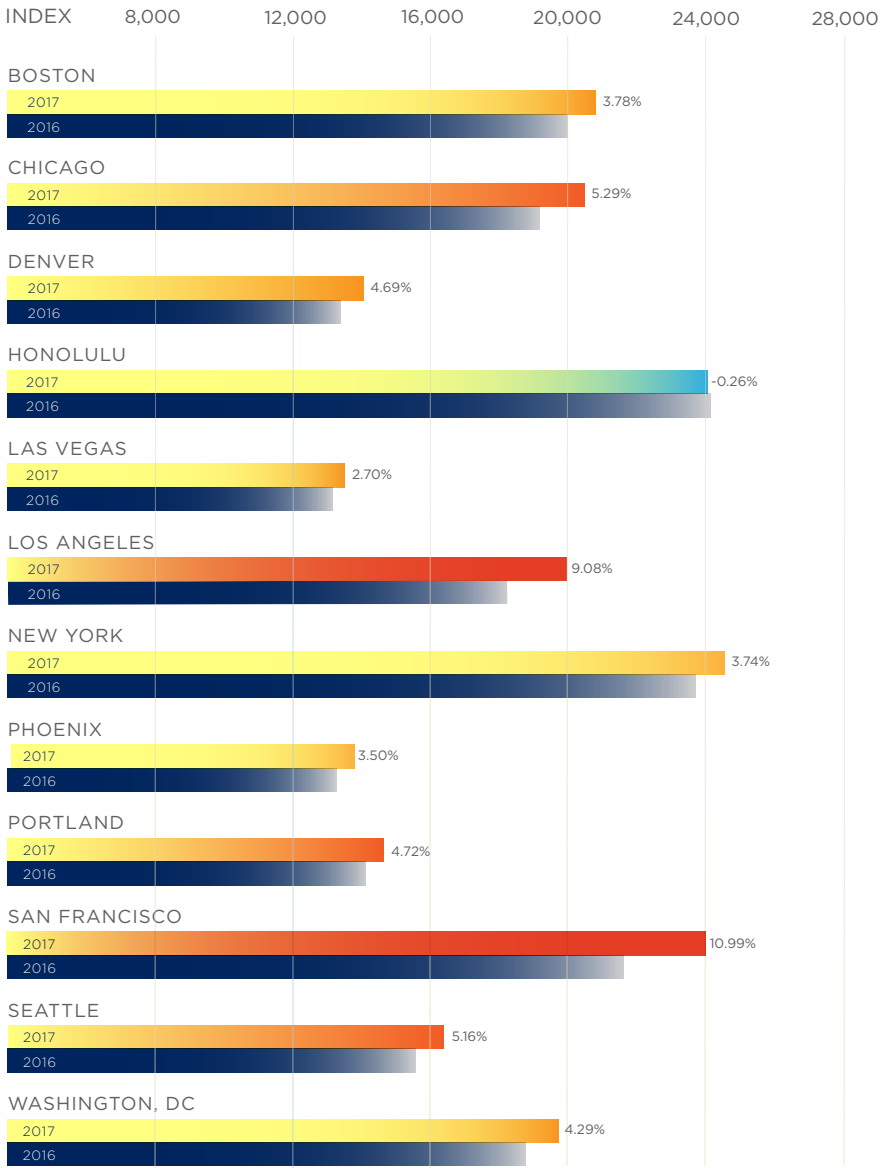


COMPARATIVE COST INDEX



City	April 2016	July 2016	October 2016	January 2017	April 2017	% Change
• Boston	20,076	20,257	20,489	20,671	20,835	3.78%
• Chicago	19,388	19,547	19,809	20,103	20,414	5.29%
• Denver	13,466	13,660	13,932	13,987	14,097	4.69%
• Honolulu	24,122	24,338	24,181	24,082	24,060	-0.26%
• Las Vegas	13,155	13,251	13,342	13,435	13,510	2.70%
• Los Angeles	18,332	19,041	19,225	19,401	19,997	9.08%
• New York	23,617	23,837	24,101	24,303	24,499	3.74%
• Phoenix	13,318	13,481	13,578	13,659	13,785	3.50%
• Portland	14,162	14,287	14,469	14,638	14,830	4.72%
• San Francisco	21,659	22,625	23,005	23,677	24,039	10.99%
• Seattle	15,613	15,774	15,972	16,190	16,419	5.16%
• Washington, DC	18,961	19,163	19,376	19,586	19,774	4.29%



Comparative Cost Map and Bar Graph Indicate percentage change between April 2016 and April 2017.



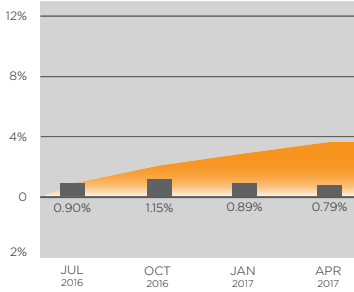
Each quarter we look at the comparative cost of construction in 12 US cities, indexing them to show how costs are changing in each city in particular, and against the costs in the other 11 locations. You will be able to find this information in the graph titled *Comparative Cost Index (above)* and in the *Cost and Change Summary (right)*.

Our Comparative Cost Index tracks the 'true' bid cost of construction, which includes, in addition to costs of labor and materials, general contractor and sub-contractor overhead costs and fees (profit). The index also includes applicable sales/use taxes that 'standard' construction contracts attract. In a 'boom,' construction costs typically increase more rapidly than the net cost of labor and materials. This happens as the overhead levels and profit margins are increased in response to the increasing demand. Similarly, in a 'bust,' construction cost increases are dampened (or may even be reversed) due to reductions in overheads and profit margins.

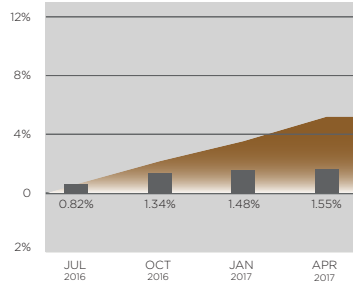
The following escalation charts track changes in the cost of construction each quarter in many of the cities where RLB offices are located. Each chart illustrates the percentage change per period and the cumulative percentage change throughout the charted timeline.

 Percentage change per quarter  Cumulative percentage change for the period shown

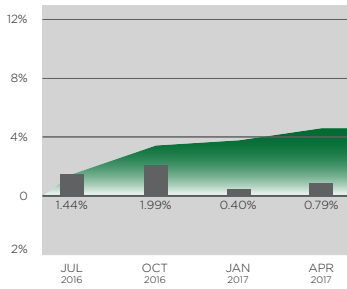
COST INDEX Boston



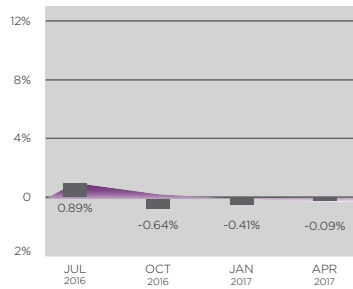
COST INDEX Chicago



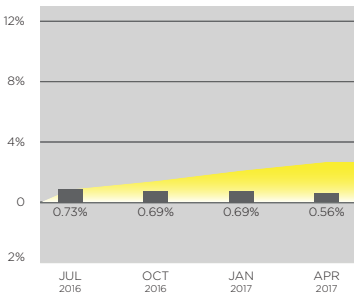
COST INDEX Denver



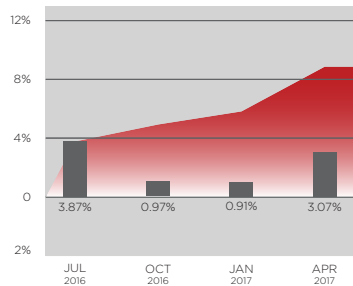
COST INDEX Honolulu



COST INDEX Las Vegas

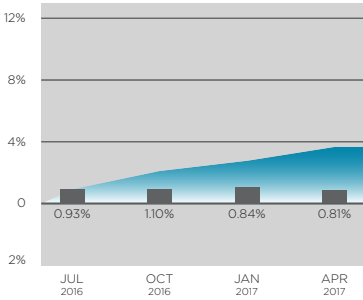


COST INDEX Los Angeles

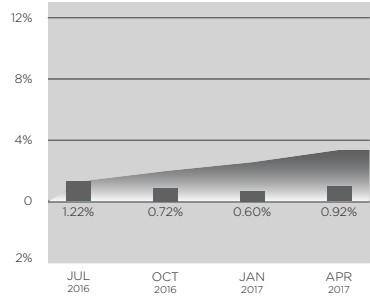


Our research suggests that between January 1, 2017 and April 1, 2017 the national average increase in construction cost was approximately 1.1%. Chicago, Los Angeles, Portland, San Francisco and Seattle all experienced increases over 1% in the quarter. Most other locations had more modest gains and, for the third consecutive quarter, Honolulu experienced a slight decrease.

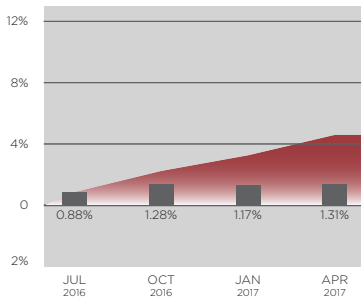
COST INDEX New York



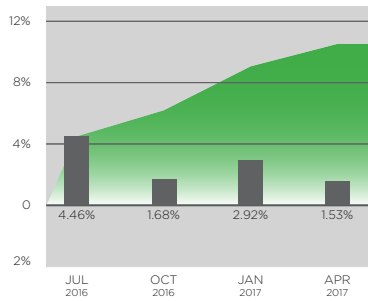
COST INDEX Phoenix



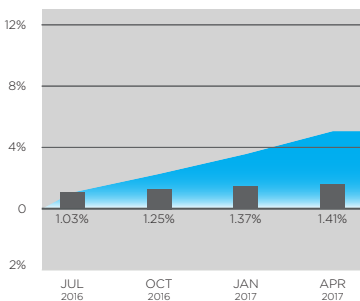
COST INDEX Portland



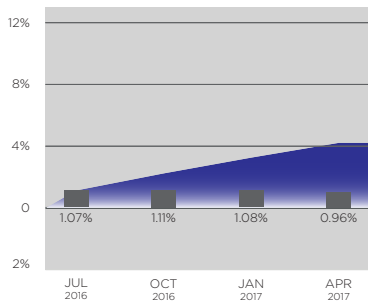
COST INDEX San Francisco



COST INDEX Seattle

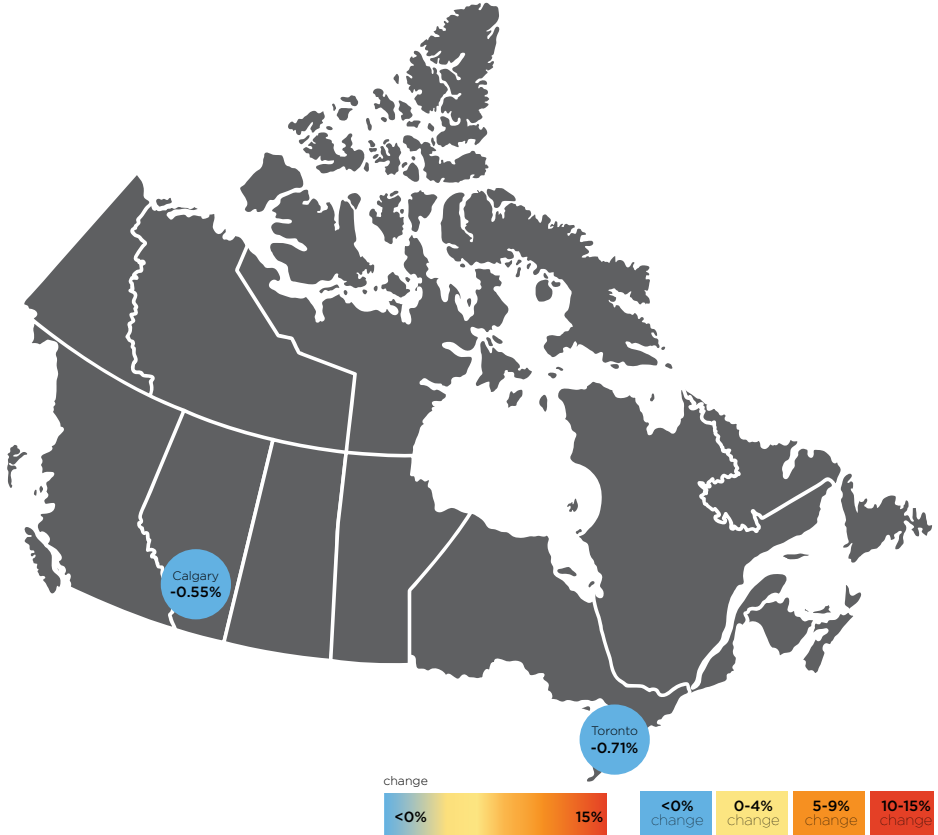


COST INDEX Washington DC





COMPARATIVE COST INDEX



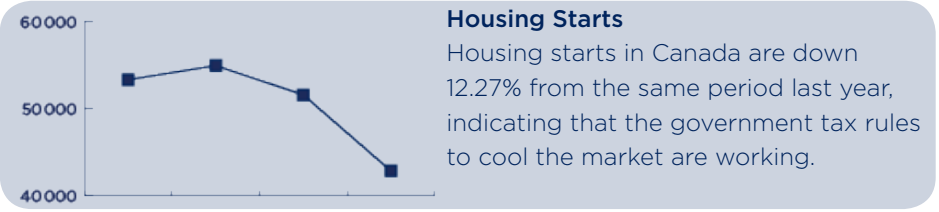
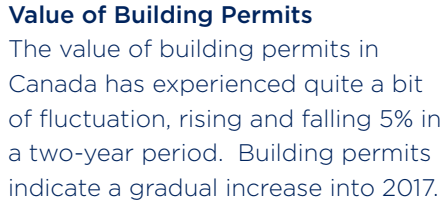
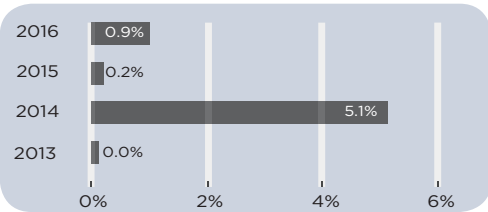
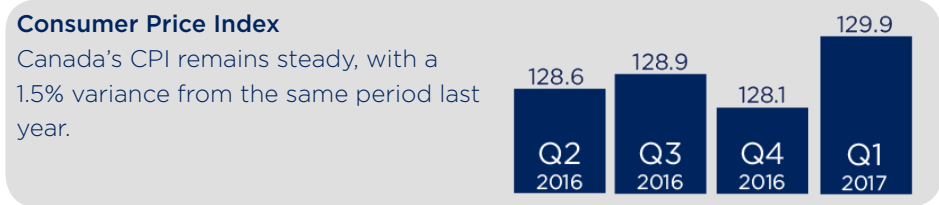
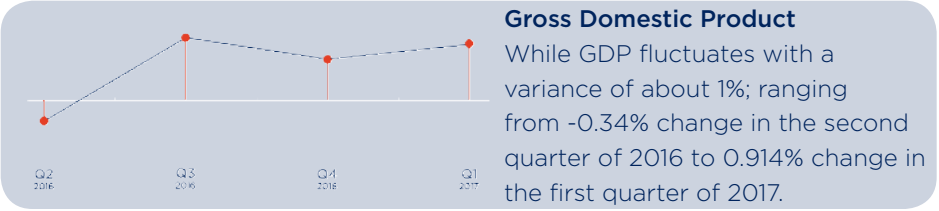
City	October 2016	January 2017	April 2017	Quarterly % Change
• Calgary	18,435	18,190	18,089	-0.55%
• Toronto	18,690	18,800	18,664	-0.71%

The Toronto construction market rebounded from a seasonal slowdown and continues to be a construction engine for the province of Ontario.

While overall construction employment has been almost static since 2014, unemployment in Ontario has dipped to 5.8% in April 2017, the lowest it's been in more than 16 years. Construction employment is slowly increasing but is being offset by the decrease in 'average hours worked' in construction.

Government programs are expected to rein in foreign investment in residential real estate. Toronto is also the recipient of billions of dollars in federal, provincial, and municipal funding for transit and infrastructure that will balance the construction market and employment for years to come.

KEY CANADIAN STATISTICS



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. 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 15 years and older. Unemployment rates are seasonally adjusted, reported at the end of the period.

Sources: Statistics Canada



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. The firm was voted #1 Cost Consultant in 2016 and 2017 by World Architecture Magazine.

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 by Taryn Harbert with contributions from Evans Pomegas, Grant Owen, Edd Hamzanlui, Paul Brussow, Maelyn Uyehara, Cassie Idehara, Simon James, Philip Mathur, Scott Macpherson, Graham Roy, Daniel Junge, George Bergeron, Peter Knowles, Catherine Stoupas, Joe Pendlebury, and Edward Traore.

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If you have questions or for more information, please contact us.

AUSTIN

Phone: +1 512 704 3026
E-mail: AUS@us.rlb.com
Contact: Ruben Rodriguez

BARBADOS

Phone: +1 246 256 0704
E-mail: erwin.benjamin@bb.rlb.com
Contact: Erwin Benjamin

BOSTON

Phone: +1 617 737 9339
E-mail: BOS@us.rlb.com
Contact: Grant Owen

CALGARY

Phone: +1 403 571 0505
E-mail: YYC@ca.rlb.com
Contact: Joe Pendlebury

CAYMAN ISLANDS

Phone: +1 345 946 6063
E-mail: martyn.bould@ky.rlb.com
Contact: Martyn Bould

CHICAGO

Phone: +1 312 819 4250
E-mail: ORD@us.rlb.com
Contact: Grant Owen

DENVER

Phone: +1 720 904 1480
E-mail: DEN@us.rlb.com
Contact: Peter Knowles

GUAM

Phone: +1 671 473 9054
E-mail: GUM@us.rlb.com
Contact: Kevin Mitchell

HILO

Phone: +1 808 934 7953
E-mail: ITO@us.rlb.com
Contact: Kevin Mitchell

HONOLULU

Phone: +1 808 521 2641
E-mail: HNL@us.rlb.com
Contact: Tony Smith
Paul Brussow
Maelyn Uyehara

LAS VEGAS

Phone: +1 702 227 8818
E-mail: LAS@us.rlb.com
Contact: Simon James

LOS ANGELES

Phone: +1 213 689 1103
E-mail: LAX@us.rlb.com
Contact: Philip Mathur

MAUI

Phone: +1 808 875 1945
E-mail: OGG@us.rlb.com
Contact: Kevin Mitchell

NEW YORK

Phone: +1 212 952 1300
E-mail: EWR@us.rlb.com
Contact: Grant Owen

PHOENIX

Phone: +1 602 443 4848
E-mail: PHX@us.rlb.com
Contact: Julian Anderson, Scott Macpherson
John Jozwick

PORTLAND

Phone: +1 503 226 2730
E-mail: PDX@us.rlb.com
Contact: Graham Roy

SAN FRANCISCO

Phone: +1 415 362 2613
E-mail: SFO@us.rlb.com
Contact: Catherine Stoupas

SAN JOSE

Phone: +1 650 943 2317
E-mail: joel.brown@us.rlb.com
Contact: Joel Brown

SEATTLE

Phone: +1 206 223 2055
E-mail: SEA@us.rlb.com
Contact: Graham Roy

ST. LUCIA

Phone: +1 758 452 2125
E-mail: mark.williamson@lc.rlb.com
Contact: Mark Williamson

TORONTO

Phone: +1 905 631 8210
E-mail: YYZ@us.rlb.com
Contact: Joe Pendlebury

TUCSON

Phone: +1 520 777 7581
E-mail: TUS@us.rlb.com
Contact: Joel Brown

WAIKOLOA

Phone: +1 808 883 3379
E-mail: KOA@us.rlb.com
Contact: Kevin Mitchell

WASHINGTON, DC

Phone: +1 202 457 1450
E-mail: DCA@us.rlb.com
Contact: Grant Owen



COLGATE

RAIDERS

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