

NORTH AMERICA

QUARTERLY CONSTRUCTION COST REPORT

FIRST QUARTER 2018





ON THE COVER

GARY K. HERBERGER YOUNG SCHOLARS ACADEMY GLENDALE, ARIZONA

The ASU Herberger Young Scholars Academy (HYSA) is designed for gifted middle and high school students, with connectivity to the campus community. It is designed to provide an optimum learning environment for the students to work in a variety of methods: individual study, open collaboration, small work groups, and lecture. The primary space is a two story work and performance space with open collaboration, varied study and work areas, and a second floor senior level lounge with views to the mountains. The spaces are agile, multidirectional learning environments. Classrooms are able to be transformed for varied uses within them and expand adjacent exterior learning environments and the central collaboration space.

The school is expressed as a sculpted enclosure, which is open to and connects with exterior learning environment in all directions. The design provides an educational setting where students can learn with intellectual peers, build friendships, pursue extra-curricular activities and contribute to the community.

Rider Levett Bucknall provided cost estimating services to Marlene Imirzian & Associates Architects for this project.

NORTH AMERICA

With the suspected exception of a jump in sales of antacid tablets and enrollment in meditation classes, as of this writing, the federal tariffs proposed for imported steel and aluminum have had few quantifiable effects on the marketplace. That's not to say there wasn't plenty of hue and cry when the administration revealed its policy.

Shortly after the initial announcement, which called to levy surcharges of 25% on foreign steel and 10% on aluminum, several trade and professional organizations weighed in on its possible repercussions. From the American Institute of Architects' statement: "Any move that increases building costs will jeopardize domestic design and the construction industry, which is responsible for billions in U.S. Gross Domestic Product, jobs growth, and job creation." "Higher steel and aluminum prices will make the kind of infrastructure work President Trump supports more expensive, forcing federal, state, and local officials to cut back on projects they can fund. And the likely trade wars these new tariffs prompt will diminish demand for private investment in infrastructure, as well as construction demand for manufacturing, shipping, and distribution facilities," declared the Associated General Contractors of America.

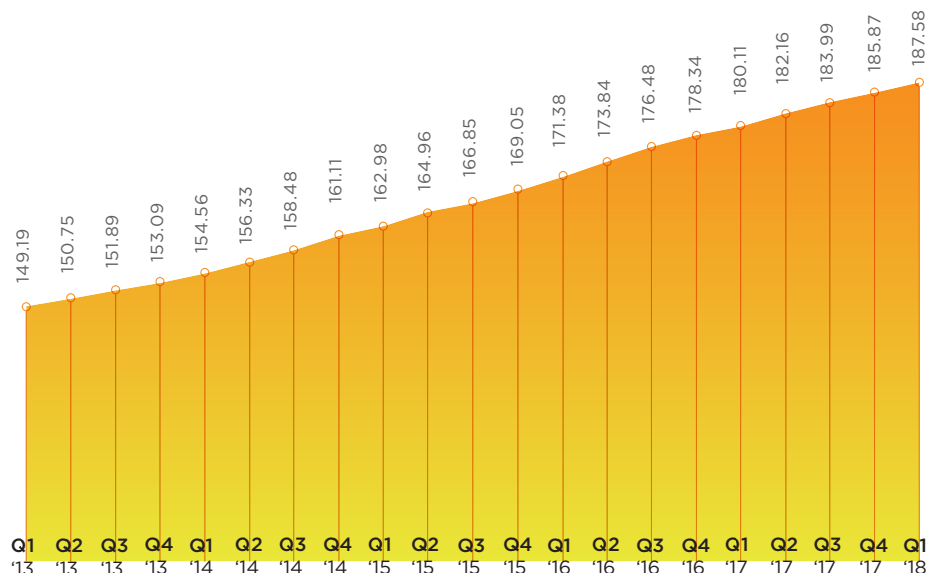
In response to such lobbying, within a week, allowances and exceptions began to creep into the previously blanket decree, moderating its terms, if not its tenor. Material from Canada and Mexico would be exempted, at best which NAFTA is being renegotiated; then temporary exemptions were also granted to Argentina, Australia, Brazil, the European Union, and South Korea. The upshot has been murky, at best, and has resulted in questions that will only be answered over time. How will the practice of transshipping metals—always problematic—be addressed? As similar tariffs imposed in 2002 led to a shortage of steel, will history repeat itself? What will be the effect on construction firms that have fixed-price contracts with suppliers?

Doubtless there will be more developments to come. As this complicated and controversial issue unfolds, be assured that Rider Levett Bucknall is focused on continuing to earn your trust by delivering the most accurate information and advice on construction costs and strategies.



Julian Anderson FRICS
President, North America
Chairman of the Global Board

NATIONAL CONSTRUCTION COST INDEX



Welcome to the first quarter 2018 issue of the Rider Levett Bucknall Quarterly Cost Report! This issue contains data current to January 1, 2018.

\$1,262.8

Billion

According to the U.S. Department of Commerce, construction-put-in-place during January 2018 was estimated at a seasonally adjusted annual rate of \$1,262.8 billion, which is

nearly

the same

as the revised December 2017 estimate of \$1,262.7 billion, and

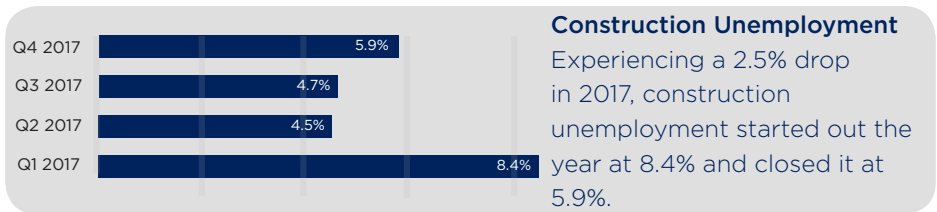
3.2%

above

above the January 2017 estimate of \$1,223.5 billion.

The National Construction Cost Index shows the changing cost of construction between January 2013 and January 2018, relative to a base of 100 in April 2001. Index recalibrated as of April 2011.

KEY UNITED STATES 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. 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.

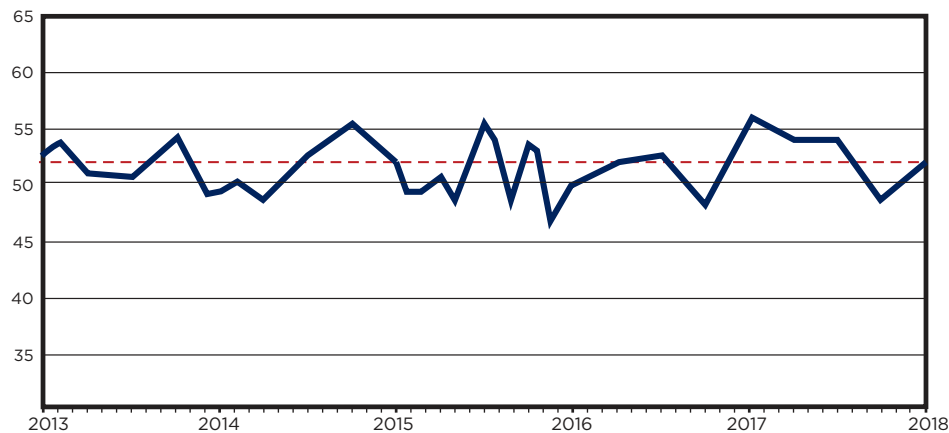
Sources: U.S. Bureau of Labor Statistics, Bureau of Economic Analysis, American Institute of Architects.

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 | 700 | 110 | 185 | 80 | 125 | 120 | 155 | 160 | 340 | 220 | 420 | 250 | 380 | 300 | 400 | 350 | 600 |
| Denver | 165 | 255 | 120 | 185 | 90 | 145 | 80 | 175 | 215 | 325 | 160 | 240 | 380 | 470 | 90 | 150 | 50 | 75 | 90 | 120 | 90 | 200 | 90 | 410 | 250 | 300 | 260 | 315 | 305 | 415 |
| Honolulu | 285 | 525 | 245 | 400 | 210 | 490 | 175 | 430 | 515 | 740 | 325 | 545 | 475 | 755 | 145 | 225 | 100 | 145 | 140 | 265 | 195 | 440 | 280 | 755 | 340 | 475 | 405 | 605 | 440 | 715 |
| 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 | 225 | 340 | 165 | 250 | 150 | 330 | 120 | 185 | 355 | 520 | 255 | 330 | 475 | 705 | 110 | 175 | 105 | 125 | 130 | 175 | 185 | 295 | 190 | 335 | 340 | 450 | 360 | 485 | 390 | 555 |
| 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 | 120 | 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 | 300 | 420 |
| Portland | 180 | 250 | 130 | 180 | 140 | 240 | 120 | 180 | 230 | 330 | 150 | 240 | 380 | 525 | 90 | 150 | 85 | 105 | 110 | 150 | 150 | 240 | 125 | 280 | 270 | 335 | 285 | 350 | 310 | 440 |
| 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 | 340 | 450 | 315 | 400 | 250 | 375 |
| Seattle | 205 | 250 | 150 | 205 | 135 | 305 | 110 | 155 | 245 | 340 | 225 | 240 | 390 | 540 | 100 | 125 | 95 | 120 | 140 | 165 | 165 | 260 | 170 | 300 | 275 | 320 | 325 | 480 | 315 | 475 |
| 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 | 550 | 720 | 85 | 145 | 75 | 90 | 75 | 120 | 140 | 215 | 125 | 315 | 185 | 260 | 220 | 310 | 300 | 450 |
| Toronto | 195 | 260 | 174 | 250 | 200 | 250 | 105 | 160 | 300 | 355 | 195 | 260 | 500 | 645 | 115 | 150 | 70 | 90 | 70 | 90 | 130 | 205 | 190 | 330 | 175 | 195 | 200 | 230 | 200 | 295 |

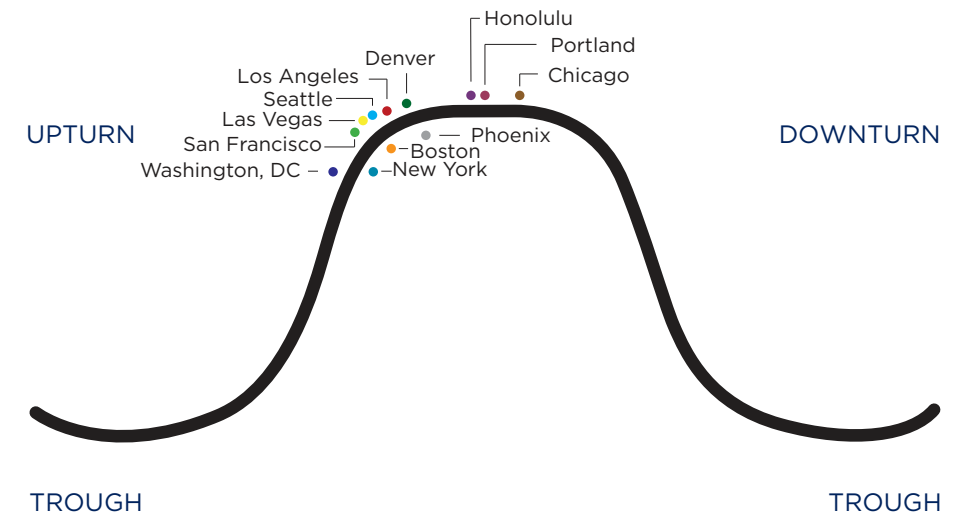
ARCHITECTURAL BILLINGS INDEX



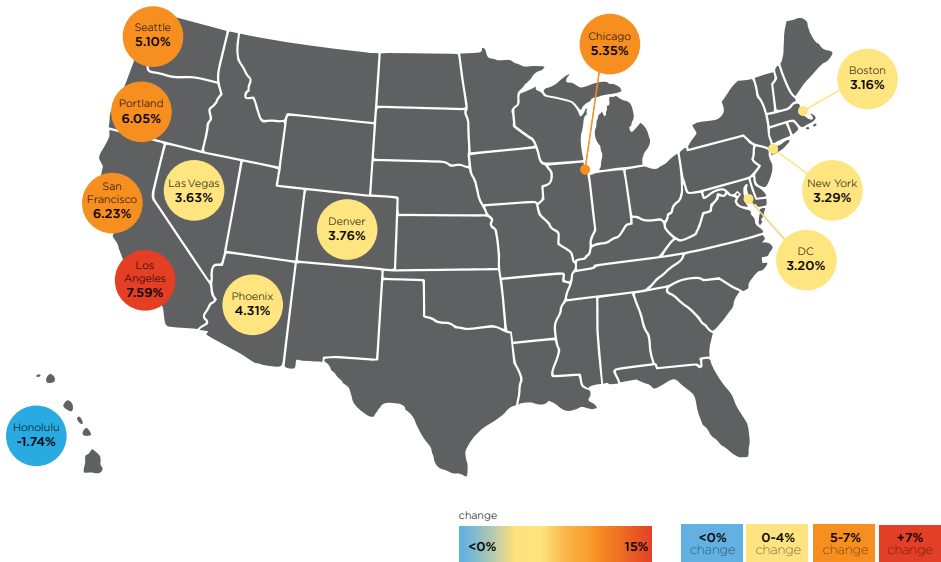
As a leading economic indicator of construction activity, the Architectural Billings Index (ABI) reflects the approximate nine to twelve month lag time between architecture billings and construction spending.

The American Institute of Architects reported the December 2017 ABI score was 52.9, a recovery from the modest dip to 49.1 in September 2017. The end-of-year spike points toward a robust year of billings in 2018.

CONSTRUCTION ACTIVITY CYCLE

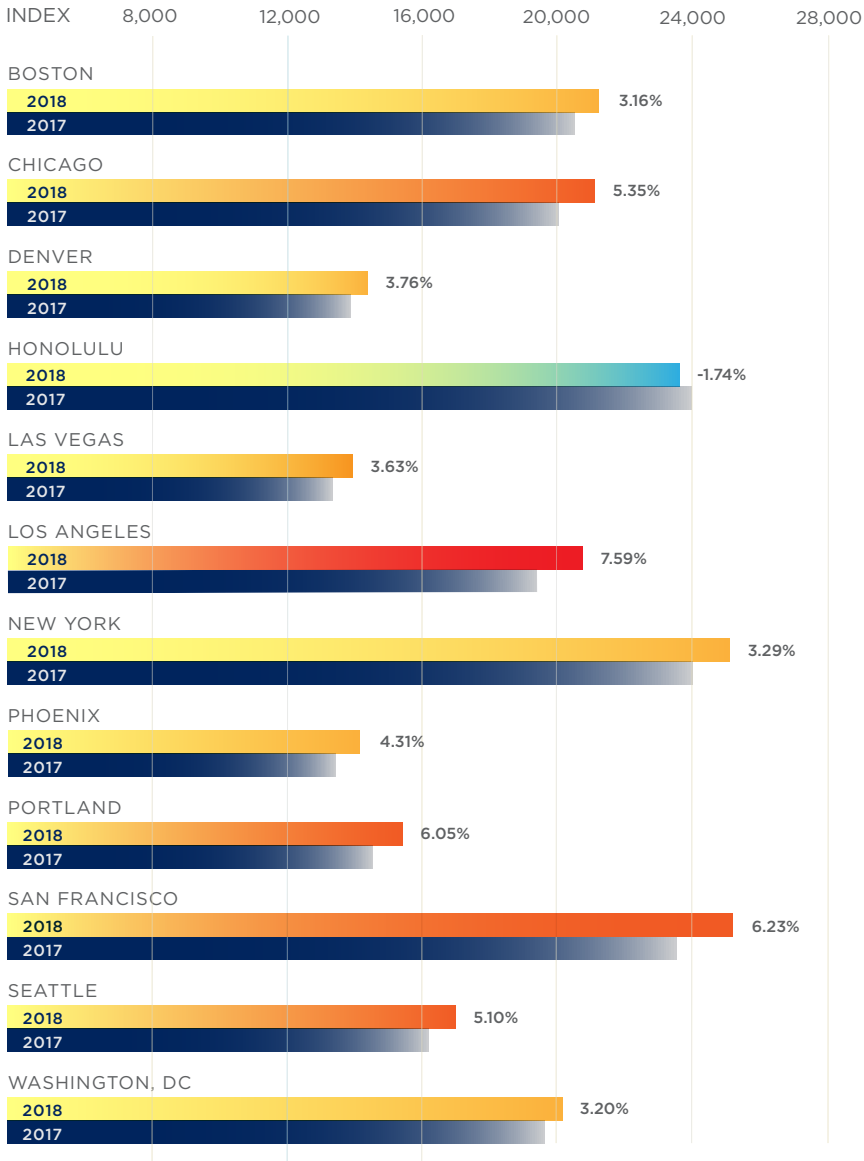


COMPARATIVE COST INDEX



| City | January 2017 | April 2017 | July 2017 | October 2017 | January 2018 | Annual % Change |
|------------------|--------------|------------|-----------|--------------|--------------|-----------------|
| • Boston | 20,671 | 20,835 | 20,989 | 21,176 | 21,325 | 3.16% |
| • Chicago | 20,103 | 20,414 | 20,652 | 20,905 | 21,177 | 5.35% |
| • Denver | 13,987 | 14,097 | 14,187 | 14,337 | 14,513 | 3.76% |
| • Honolulu | 24,082 | 24,060 | 24,050 | 24,058 | 23,663 | -1.74% |
| • Las Vegas | 13,435 | 13,510 | 13,614 | 13,777 | 13,922 | 3.63% |
| • Los Angeles | 19,401 | 19,997 | 20,326 | 20,586 | 20,874 | 7.59% |
| • New York | 24,303 | 24,499 | 24,698 | 24,927 | 25,104 | 3.29% |
| • Phoenix | 13,659 | 13,785 | 13,900 | 14,080 | 14,248 | 4.31% |
| • Portland | 14,638 | 14,830 | 15,044 | 15,302 | 15,524 | 6.05% |
| • San Francisco | 23,677 | 24,039 | 24,546 | 24,760 | 25,151 | 6.23% |
| • Seattle | 16,190 | 16,419 | 16,654 | 16,804 | 17,017 | 5.10% |
| • Washington, DC | 19,586 | 19,774 | 19,884 | 20,054 | 20,212 | 3.20% |


Comparative Cost Map and Bar Graph Indicate percentage change between January 2017 and January 2018.




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)*.

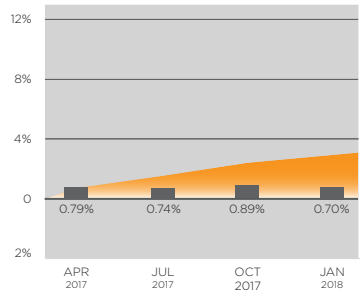
Our Comparative Cost Index tracks the 'true' bid cost of construction, which includes, in addition to costs of labor and materials, general contractor and sub-contractor overhead costs and fees (profit). The index also includes applicable sales/use taxes that 'standard' construction contracts attract. 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.

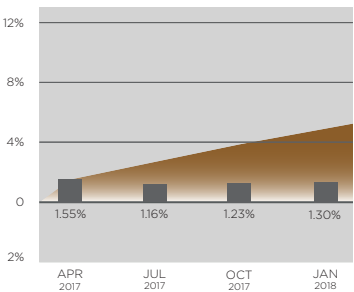
 Percentage change per quarter

 Cumulative percentage change for the period shown

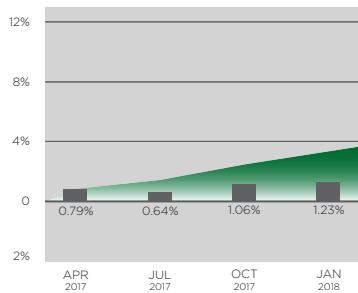
COST INDEX Boston



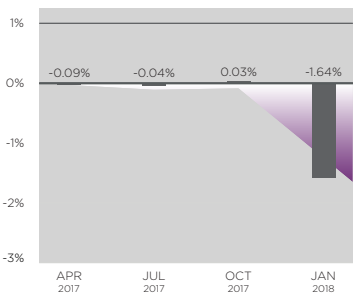
COST INDEX Chicago



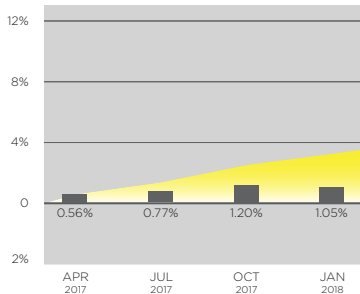
COST INDEX Denver



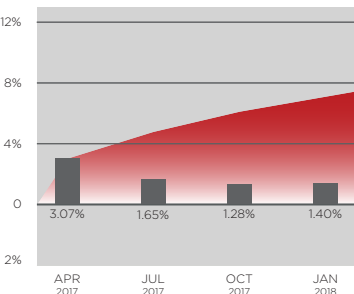
COST INDEX Honolulu



COST INDEX Las Vegas

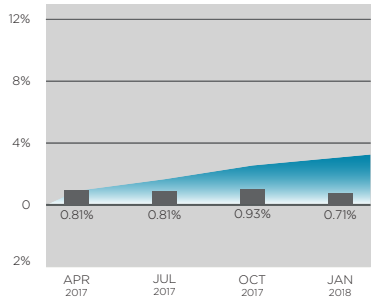


COST INDEX Los Angeles

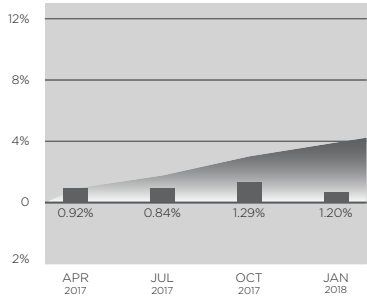


Our research suggests that between January 1, 2017 and December 31, 2017 the national average increase in construction cost was approximately 4.2%. Los Angeles, Portland, and San Francisco experienced the greatest annual increases showing escalation over 6% while Boston, Chicago, Denver, Las Vegas, New York, Phoenix, Seattle, and Washington DC all experienced lower annual increases between 3.2% and 5.4%. Honolulu experienced an annual decrease of approximately 1.7%.

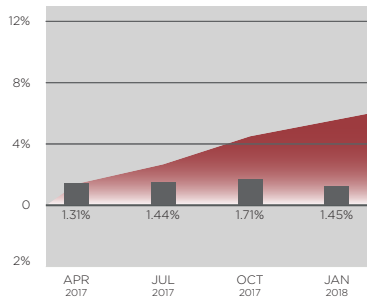
COST INDEX New York



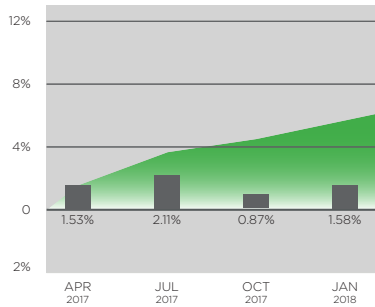
COST INDEX Phoenix



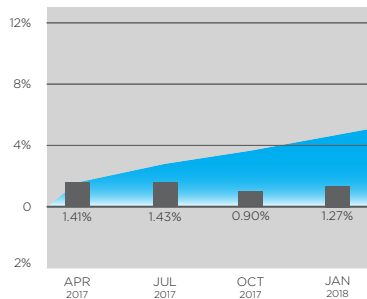
COST INDEX Portland



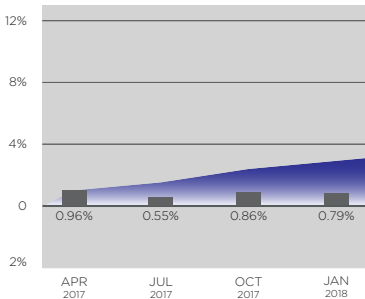
COST INDEX San Francisco



COST INDEX Seattle

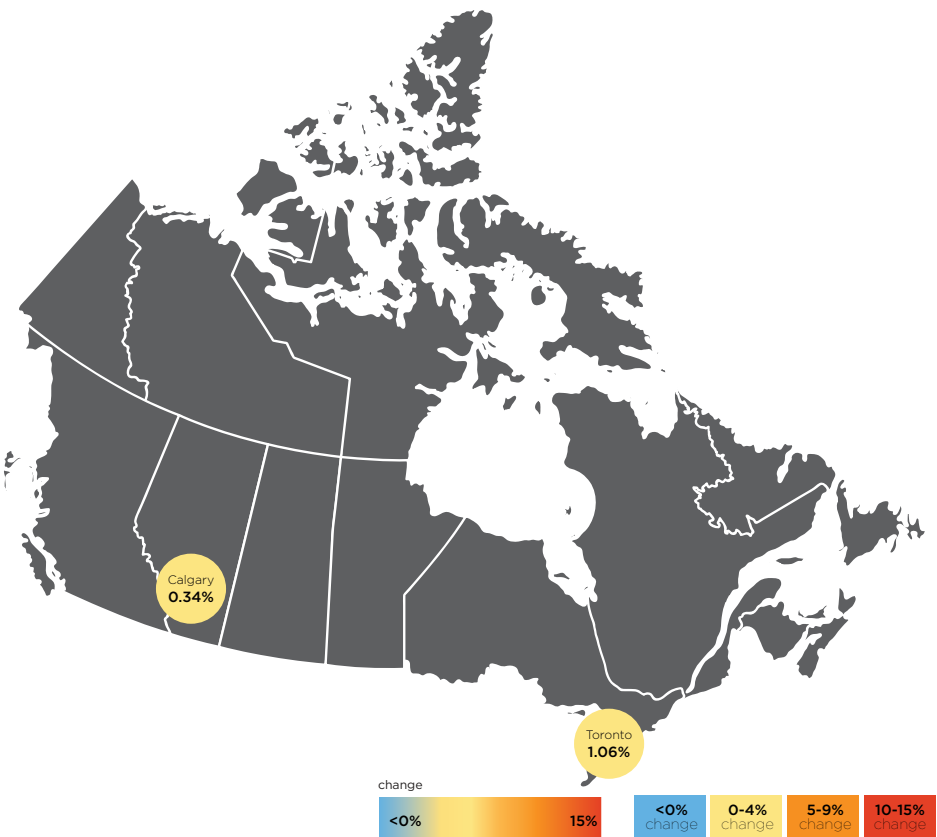


COST INDEX Washington DC





COMPARATIVE COST INDEX

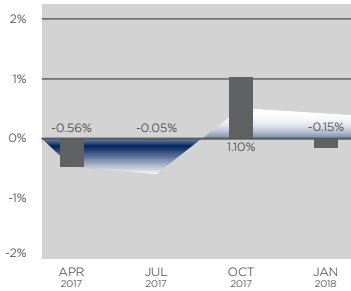


| City | January 2017 | April 2017 | July 2017 | October 2017 | January 2018 | Annual % Change |
|-----------|--------------|------------|-----------|--------------|--------------|-----------------|
| • Calgary | 18,190 | 18,089 | 18,080 | 18,279 | 18,252 | 0.34% |
| • Toronto | 18,800 | 18,664 | 18,569 | 18,956 | 18,999 | 1.06% |

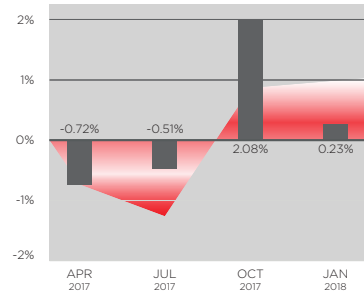
Canada's economy is expected to grow moderately in 2018. Despite economic slack and slower pace in most provinces relative to rapid growth rates in 2017, the provinces of Alberta, British Columbia, Saskatchewan, and Ontario are projected to be well above the 2% growth forecasted for 2018.

The oil sector has been a key player in the Canadian economy and, having weathered the oil price slump over the past couple of years, Canada is poised to have positive economic activities with oil prices forecasted to rise above the \$50 range, per barrel, and likely maintain that range throughout the year. This will attract more investment in the oil sector spurring economic growth in Western and Atlantic regions of Canada.

COST INDEX Calgary



COST INDEX Toronto



KEY CANADIAN STATISTICS

Gross Domestic Product (GDP)

GDP sees an approximate change of 0.5% over the course of 2017, closing out the year with a 0.49% change from the third quarter.



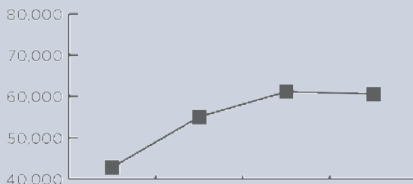
Consumer Price Index (CPI)

Canada's CPI experienced nominal change throughout 2017, with a variance of less than 1%.



Housing Starts

Housing starts in Canada experienced a 41% increase over the course of 2017, closing out the year with greater than 60,000 housing starts in the fourth quarter.



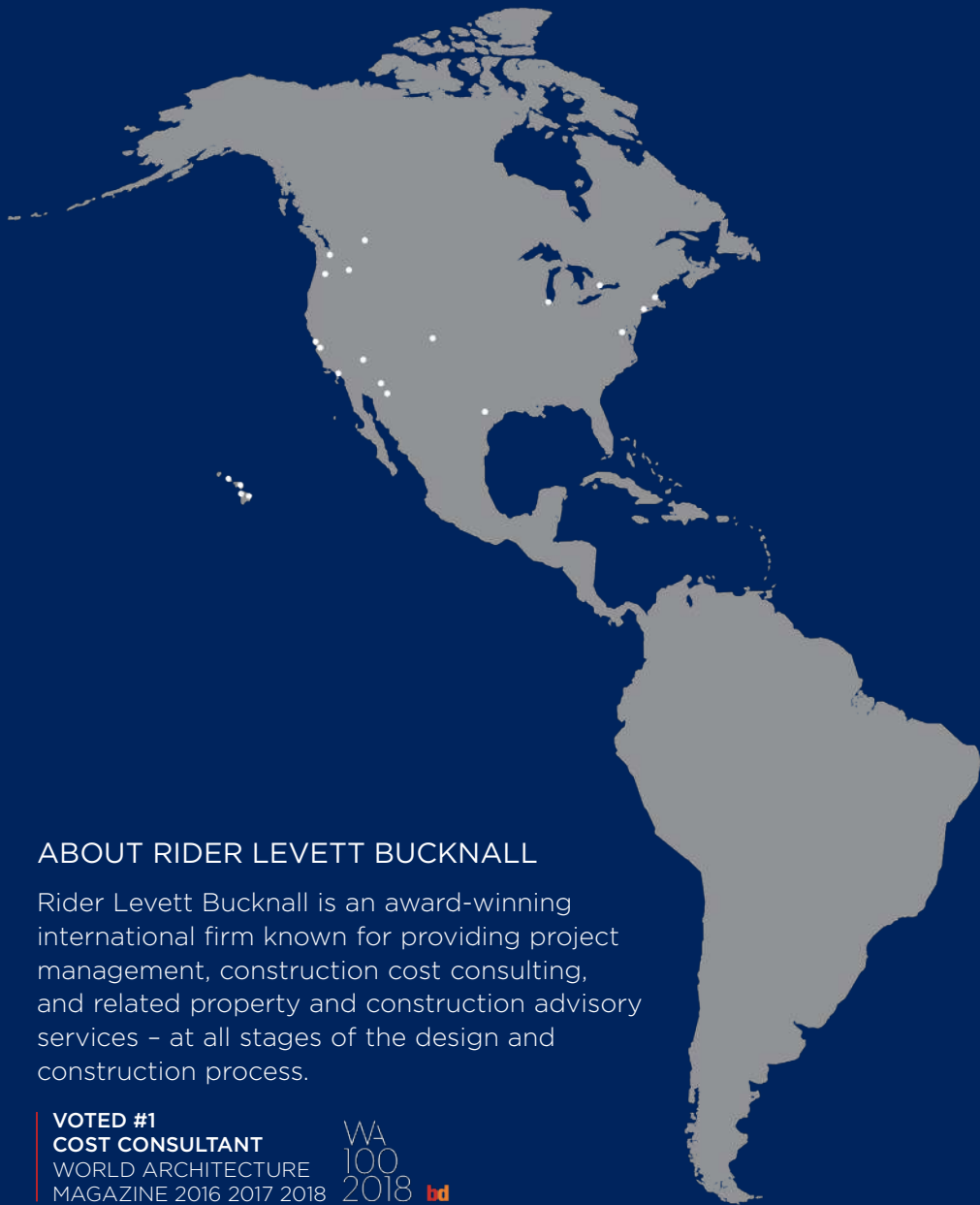
Unemployment

Canada's unemployment rate sees a 1% drop during 2017; closing out the year at 5.8%, down from 6.7% at the start of the year.



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.

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COST CONSULTANT
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MAGAZINE 2016 2017 2018

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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.

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