

# Construction Starts Forecast

For January 2019 Release

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**2018 was a good year for U.S. jobs growth. The monthly average employment increase was +220,000, which was a gain of +20.6% versus 2017's monthly average rise of +182,000. The climb in total employment was +2.6 million jobs.**



## Highlights

- US construction starts declined by 6.8% year-on-year in Q4 2018. Both residential and non-residential building starts declined, partially offset by a rise in new civil engineering projects.
- A mild slowdown in US economic growth is forecast for 2019, to 2.5%, from 2.9% in 2018. As in 2018, the labor market will continue to be a bright spot, underpinning steady growth in consumer spending. By contrast, business investment is expected to slow, as the boost from energy and fiscal stimulus start to fade. Net trade is also expected to be a drag on growth this year as trade tensions continue to disrupt flows.
- US construction starts are expected to return to growth this year of 2.3%. Residential starts are expected to rise by just 0.4%, constrained by affordability issues, skilled labor shortages and rising material costs. Growth of just 0.7% is forecast in the non-residential building category with a weaker investment outlook weighing on the prospects of several sectors. Civil engineering is forecast to be the main driver of growth, rising 8.3%, led by growth in the miscellaneous civil engineering sector (including oil & gas projects).
- Canadian construction starts increased by 50.6% year-on-year in Q4 2018. Rises above 100% in both the non-residential building and civil engineering segments were partially offset by a 25% decline in residential building. The strong rise in Canada was underpinned by three large projects: an LNG plant in British Columbia, a bridge in Ontario, and an oil sands plant in Alberta.
- Canadian starts are set to decline by 5.4% this year with a particularly steep decline of more than 30% in non-residential building. New construction in the residential sector is also set to decline, by 5.7%. The major strength of the Canadian construction sector remains in the civil engineering sector with starts growth forecast at almost 30%, underpinned by projects in the oil & gas sector.

Sources: ConstructConnect®/Oxford Economics.  
Forecast reflects actual starts through Q4 2018.

## Overview

### Construction starts continue their decline in Q4

Total US starts contracted by 6.8% year-on-year in Q4 2018. Both residential and non-residential construction declined, partially offset by an increase in new civil engineering construction. The steepest decline was in the residential sector, which fell by 15.3%. In particular, construction of new multi-family units contracted 25.3%, the fourth consecutive quarter of annual decline. Single-family construction starts also contracted, by 9.6%, the sharpest year-on-year decline since Q1 2011.

New construction of non-residential buildings fell 7.7% year-on-year. However, the picture across the subsectors is more mixed. Annual declines of over 20% were seen in new construction of transportation terminals, parking garages, shopping centers, nursing homes & assisted living, sports stadiums, and manufacturing. The declines in the latter two subsectors reflect large projects in Q4 2017 dropping out of the annual calculation — a new NFL stadium in Las Vegas in the case of sports stadiums and an ethane cracker plant in Pennsylvania in the case of manufacturing. Despite that, some of the largest new projects in Q4 were in the manufacturing sector, including a \$3 billion microchip production facility in Virginia and a \$1.5 billion aluminum plant in Kentucky. Strong growth of more than 30% year-on-year was posted in libraries & museums, prisons, hospitals and military projects.

Civil engineering construction expanded by 16.3% in Q4 2018. A number of subsectors posted annual growth above 20%, including bridges, dams, canals & marine work, roads, and miscellaneous civil engineering. New construction in the miscellaneous civil sector, which includes oil & gas projects, was boosted by ground-breaking on a \$2.2 billion pipeline project in Texas in November. Airport construction and power infrastructure, by contrast, contracted in year-on-year terms. Construction of new power projects, in particular, fell by 56.4% as a large project in Q4 2017 in California dropped out of the annual calculation.

Table 1: Summary forecasts							
(Annual percentage changes unless specified otherwise)							
	2017	2018	2019	2020	2021	2022	2023
<b>US</b>							
<b>Macro variables</b>							
GDP	2.2	2.9	2.5	1.9	1.7	1.8	1.9
Population growth	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Unemployment rate (%)	4.4	3.9	3.6	3.5	3.7	3.8	3.9
Real disposable income	2.6	2.7	2.2	1.9	1.9	2.0	2.0
Central bank rate (%)	1.0	1.8	2.6	2.9	2.9	2.9	2.9
10-year government yield (%)	2.3	2.9	2.9	3.1	3.3	3.5	3.5
<b>Construction starts (y/y % change of \$ volumes)</b>							
Total starts	14.5	-5.0	2.3	4.1	3.7	4.3	4.8
Residential	16.2	-9.5	0.4	5.4	5.1	6.9	8.2
Non-res bldg	8.7	-7.1	0.7	1.9	1.8	1.9	1.8
Civil engineering	25.1	8.8	8.3	5.8	4.6	3.8	3.7
<b>Canada</b>							
<b>Macro variables</b>							
GDP	3.0	2.1	1.6	1.2	1.5	1.6	1.5
Population growth	1.2	1.4	1.3	1.0	1.0	1.0	1.0
Unemployment rate (%)	6.3	5.8	5.9	6.0	6.0	6.0	6.0
Real disposable income	3.9	2.3	1.7	1.4	1.7	1.7	1.7
Central bank rate (%)	0.7	1.4	1.9	2.4	2.5	2.5	2.5
10-year government yield (%)	1.8	2.3	2.3	2.9	3.1	3.1	3.1
Exchange rate C\$ per US\$	1.30	1.30	1.28	1.27	1.26	1.25	1.25
<b>Construction starts (y/y % change of \$ volumes)</b>							
Total starts	17.8	20.0	-5.4	5.8	4.0	4.0	3.4
Residential	7.7	-14.8	-5.7	4.9	5.1	5.9	5.4
Non-res bldg	60.2	80.8	-31.9	3.1	0.1	-0.4	-1.4
Civil engineering	6.7	10.1	28.5	8.0	6.0	5.5	5.0

The partial government shutdown has led to delays in data releases for some alternative construction indicators. For example, the most recent reading for the Census Bureau's put-in-place measure of construction spending is from October. Construction labor market data, however, is released by the Bureau of Labor Statistics, which has been open. Labor market data paint a reasonable picture in the construction sector. The construction sector added 69,000 jobs in Q4, and 280,000 jobs were added in 2018 as a whole, up from 250,000 in 2017. However, labor shortages, especially for skilled workers, are of growing concern. The JOLTS labor market survey shows job vacancy rates in the construction sector close to their highest level since 2001, although the monthly readings are volatile.

Meanwhile, hourly earnings were up 3.8% year-on-year in Q4 and the unemployment rate fell to an historic Q4 low of 5% (the data are not seasonally adjusted). Going forward, labor shortages could limit the extent to which construction spending can keep pace with demand.

### Pace of growth to slow gradually

A mild slowdown in US economic growth is forecast for 2019, to 2.5% from 2.9% in 2018. The labor market continues to be a bright spot — the economy added 312,000 jobs in December, exceeding market expectations and average hourly earnings grew by 3.2% year-on-year, the fastest pace yet in this economic cycle. Rising incomes and strong consumer confidence all point to steady growth in household spending of

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2.8% in 2019, little changed from the pace of 2.7% posted in 2018.

Business activity, by contrast, is expected to moderate in 2019. The boost from energy investment is expected to slow, and the benefits from the Tax Cuts and Jobs Act are expected to gradually fade. Business investment growth is expected to slow to 3.4% in 2019, from 6.8% in 2018. Housing activity is also forecast to struggle due to declining affordability and cost pressures faced by builders. Net trade is expected to be a drag on growth this year as trade tensions continue to disrupt flows.

The Federal Reserve continues to tighten monetary policy, most recently raising rates by an additional 25 basis points (bp) in December to a target range of 2.25-2.5%. Inflation is currently hovering close to the 2% target, and Fed officials have gone to great lengths to assure investors that they are monitoring market conditions. Given this, we see the Fed pausing its tightening cycle until May, then hiking for a second time this year in September.

## Slow growth in construction to resume this year

US construction starts are forecast to grow by 2.3% in 2019. Weaker construction activity in Q4 2018 has lowered growth expectations for this year, most notably in the residential sector. Residential starts are forecast to grow by 0.4% as weak home sales dent demand. Non-residential starts are forecast to grow by 0.7%. The civil engineering sector will be the major driver of construction growth this year, with starts growth forecast at 8.3%.

The US residential starts forecast for 2019 has been revised down since our last update on account of far weaker activity than expected in the multi-family segment. The single-family segment remains more positive, in keeping with our broad analysis that there is an ongoing resurgence in single-family homebuilding. Unlike multi-family starts, single-family starts witnessed a very sharp decline during the financial crisis and subsequent years, and hence there is still significant upside potential.

Nonetheless, the short-run outlook remains downbeat for US homebuilding.

Table 2: Drivers of headline sectors		
Sector	Short-term drivers	Long-term drivers
Residential	Unemployment rate; Household liabilities; Mortgage interest rates; House prices; Population trends	House prices; Incomes
Non-residential building	Output trends in relevant sector; Population trends; Capacity utilization; Borrowing costs; Employment in relevant sector; Disposable income	Output trends in relevant sector; Employment in relevant sector
Civil engineering	Federal/State/Provincial spending; Government borrowing costs; Employment in government sector; Output trends in relevant sector	Federal/State/Provincial spending; Output trends in relevant sector

Supply-side constraints in the labor market are curtailing current growth as a lack of qualified construction workers bites. With roughly 25% of construction workers being immigrants, this issue is exacerbated by the tougher immigration stance of the Trump administration and has been alluded to by the National Association of Home Builders (NAHB) as one of the major reasons for the slower homebuilding climate. Furthermore, higher material input costs are also weighing on homebuilding. Timber prices have seen sharp rises since the Trump administration levied tariffs on Canadian timber imports. Given that roughly one-third of softwood lumber used in US homebuilding was imported from Canada, the NAHB calculates this increases the building costs per home by \$1,350.

Non-residential starts are forecast to post minimal growth of just 0.7% in 2019. Private office building is expected to see a return to growth this year following a small decline in 2018. Educational starts are forecast to grow by 2.3% this year as demand for new elementary and high-school construction remains solid. We expect that positive US demographics, particularly in the under-14 age group, will continue to drive demand for new school space over the coming years. Hospital starts are forecast to decline for the second year; the chipping away at parts of the Affordable Care Act has created uncertainty in the sector. However, we don't expect this trend to continue beyond 2019

as the aging US population drives demand for new facility construction. US manufacturing starts are forecast for a minor decline this year, but the medium-term outlook remains more constructive. The ongoing effects of re-shoring of US manufacturing to American territory are creating demand for new construction activity in the manufacturing space. The US holds many benefits for manufacturers to setup their operations such as cheap energy prices, a high-skilled workforce, advanced technology supply chains and a huge internal market into which to sell. The pro-business/anti-regulation approach of the Trump administration has only boosted these trends.

Civil engineering starts are set to grow by 8.3% this year. The driving force for this comes from the miscellaneous civil category that includes oil and gas projects. Investment in this sector has been rife in recent years as the rebounding oil price and improving technological know-how in new extractive industries such as fracking have increased the profitability of such projects. In addition, the coming of the Trump administration's de-regulation of oil and gas investments has opened new areas to investment. Most notable of the new developments is the Keystone XL pipeline, but other less well-known projects such as the Driftwood pipeline in Louisiana and a new LNG export terminal in Texas are also significant to the forecast. The political outlook for a significant new infrastructure push at the

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governmental level looks increasingly distant, in spite of broad political support for such a move. In the current political environment, it is highly unlikely there will be any significant infrastructure legislation.

## Construction set to shrink in Canada

Total Canadian construction starts rose by 50.6% year-on-year in Q4 2018, with rises of more than 100% in the non-residential and civil engineering sectors countered by a 25% decline in the residential sector. The strong rise was underpinned by the start of three large projects: a \$10 billion LNG plant in British Columbia, a \$4 billion bridge connecting Detroit to Windsor, Ontario, and a \$2.6 billion oil sands plant in Alberta. Within non-residential building, the strongest growth was in manufacturing (where the LNG plant was classified), religious institutions, parking garages, and hotels & motels, all with year-on-year growth exceeding 100%. In the civil engineering sector, the strongest growth was in bridges, dams, canals & marine work, and miscellaneous civil projects (where the oil sands plant was classified). In the residential sector, both single-family and multi-family starts declined in year-on-year terms, by 16.1% and 35.8% respectively.

Like in the US, GDP growth in Canada is set to moderate in 2019, to 1.6%, from 2.1% growth in 2018. Over the next several years, a gradual rotation in drivers of growth away from a reliance on consumer spending and housing, and towards more broadly-balanced, albeit slower, growth is forecast. Since 2015, consumers have accounted for about three-quarters of GDP growth, but looking ahead, consumer spending will face headwinds from rising interest rates, slower employment growth and firmer inflation. Business activity is also weakening; recent

falls in oil prices have prompted production cuts by the Alberta government. Countering that, however, new federal tax measures and the passage of the USMCA should provide some upside. On the trade front, reduced North American trade uncertainty and a competitive currency should support stronger net exports, but moderating growth in the US and the rest of the world are potential constraints. The Bank of Canada held interest rates steady in January due to slower economic activity, but we expect the Bank will resume its tightening stance and lift rates to 2.5% by the end of 2020.

Total Canadian starts are set to decline by 5.4% this year amid sharp declines in non-residential construction. Overall non-residential construction is set to decline by more than 30% this year, but much of this is a natural counter-reaction to the near doubling of non-residential starts in 2018. The residential sector is set for a second year of decline, with starts forecast to fall by 5.7%. The major strength of the Canadian construction sector remains in the civil engineering sector with starts growth forecast at almost 30% for 2019.

The civil engineering sector remains at the heart of Canadian construction growth. Much of the reason for the current high growth in civil engineering starts is down to rebounding activity following the 2014 oil price collapse that saw a precipitous drop-off in oil & gas civil engineering projects. Despite the decline in the oil price towards the end of 2018, a number of large oil & gas projects remain in the pipeline, so growth is set to take off. In addition to extraction sector growth, road construction is forecast to grow by 8.3% in 2019 and maintain a steady growth path of roughly 4% over the medium term. Power infrastructure starts are forecast to grow at a double-digit pace over the next 3 years as the sector rebounds from multi-year declines in investment.

The sharp decline in non-residential starts this year must be viewed in the context of very high growth in 2018. With growth of 80% in 2018, some decline in starts in 2019 is inevitable. This is most notable in the manufacturing sector where starts are set to decline by 53% this year after growing by 430% in 2018. There has been some bad news in the Canadian manufacturing sector, most notably, the announced closure of GM's plant in Oshawa. Nonetheless, the emergence of the USMCA trade deal should provide some security to Canadian manufacturing and remove some of the uncertainty holding back investment in the sector. Hotels & motels starts are more upbeat with growth forecast at a double digit pace over the next three years as hotel construction rebounds after several years of stagnation. The non-residential sector is further supported by solid growth in office starts, warehouses and educational establishments.

Canadian residential starts are set to decline for the second year running. Canadian homebuilding is gradually cooling amid tighter lending conditions and declining affordability. The Canadian government has put in place macro prudential policies designed to prevent overheating in urban housing markets in Toronto and Vancouver. These policies are most likely to impact the multi-family segment. Nonetheless, the long-run fundamentals for Canadian residential are more supportive. Unlike the US, there is no cyclical catch-up component to the Canadian housing market, but the country does still benefit from solid population growth. Furthermore, the demographics of Canada are particularly conducive to growth in the single-family sector. The sizable millennial generation is creating new households that are driving up the demand for new suburban housing.



**Table 3: U.S. Type-of-Structure Forecasts**

(\$ Billions USD)

	Actuals		Forecasts				
	2017	2018	2019	2020	2021	2022	2023
Single-family	199.943	201.195	208.922	218.841	230.305	247.778	272.294
Multi-family	117.978	86.532	80.057	85.780	89.958	94.556	98.056
<b>TOTAL RESIDENTIAL</b>	<b>317.921</b>	<b>287.727</b>	<b>288.979</b>	<b>304.621</b>	<b>320.263</b>	<b>342.334</b>	<b>370.350</b>
(Yr/yr % change)	16.2%	-9.5%	0.4%	5.4%	5.1%	6.9%	8.2%
Hotels/Motels	28.645	25.524	20.447	16.716	15.611	15.241	15.556
Shopping/Retail	19.999	16.835	15.918	15.968	16.597	17.400	18.222
Parking Garages	3.514	2.785	2.789	2.825	2.910	3.008	3.121
Amusement	7.854	8.214	8.416	8.794	9.165	9.520	9.819
Private Offices	28.974	27.874	29.676	30.636	29.972	28.922	28.644
Governmental Offices	10.572	10.833	11.353	11.602	11.919	12.143	12.351
Laboratories (Schools & Industrial)	2.994	3.066	3.304	3.528	3.687	3.844	3.996
Warehouses	21.567	19.983	19.523	19.097	19.840	20.526	20.976
Sports Stadium/Convention Center	15.493	7.001	8.531	9.515	9.674	9.389	8.816
Transportation Terminals	3.839	5.207	7.799	8.726	9.224	9.663	10.071
<b>TOTAL COMMERCIAL</b>	<b>143.452</b>	<b>127.322</b>	<b>127.756</b>	<b>127.407</b>	<b>128.599</b>	<b>129.655</b>	<b>131.574</b>
(Yr/yr % change)	4.7%	-11.2%	0.3%	-0.3%	0.9%	0.8%	1.5%
<b>TOTAL INDUSTRIAL (manufacturing)</b>	<b>36.748</b>	<b>34.263</b>	<b>34.142</b>	<b>34.849</b>	<b>35.613</b>	<b>37.235</b>	<b>38.458</b>
(Yr/yr % change)	81.9%	-6.8%	-0.4%	2.1%	2.2%	4.6%	3.3%
Religious	2.246	2.059	2.074	2.113	2.125	2.142	2.155
Hospitals/Clinics	16.628	15.787	15.025	15.984	16.979	18.027	19.066
Nursing Homes/Assisted Living	11.906	10.181	10.221	10.587	10.967	11.311	11.620
Libraries/Museums	3.582	2.746	2.931	3.023	3.124	3.222	3.305
Courthouse	2.698	1.833	1.890	1.976	2.046	2.112	2.180
Police/Fire	2.858	3.048	3.108	3.233	3.396	3.562	3.672
Prisons	2.886	3.243	3.400	3.563	3.726	3.874	4.001
Military	4.776	5.571	6.247	6.934	7.306	7.596	7.826
Educational Facilities	69.453	70.063	71.695	73.934	74.659	75.111	75.437
MED misc	10.909	10.337	10.036	10.474	10.778	11.069	11.292
<b>TOTAL INSTITUTIONAL</b>	<b>127.941</b>	<b>124.868</b>	<b>126.626</b>	<b>131.821</b>	<b>135.105</b>	<b>138.025</b>	<b>140.555</b>
(Yr/yr % change)	2.6%	-2.4%	1.4%	4.1%	2.5%	2.2%	1.8%
Miscellaneous Non-Res Building	7.661	6.981	7.071	7.178	7.292	7.399	7.489
<b>TOTAL NON-RES BLDG</b>	<b>315.802</b>	<b>293.434</b>	<b>295.596</b>	<b>301.255</b>	<b>306.610</b>	<b>312.314</b>	<b>318.075</b>
(Yr/yr % change)	8.7%	-7.1%	0.7%	1.9%	1.8%	1.9%	1.8%
Airport	12.541	7.166	9.803	10.673	11.541	12.254	12.995
Roads	53.103	63.579	67.046	70.732	73.337	76.055	79.003
Bridges	20.610	23.955	26.615	27.494	28.215	28.921	29.643
Dams/Canal/Marine	5.089	6.874	6.664	6.788	7.049	7.323	7.590
Water & Sewage Treatment	32.041	29.836	30.048	32.527	34.720	36.383	38.020
Misc Civil (Power, etc.)	26.358	31.532	36.308	38.418	40.429	41.779	42.951
<b>TOTAL ENGINEERING</b>	<b>149.741</b>	<b>162.942</b>	<b>176.485</b>	<b>186.633</b>	<b>195.292</b>	<b>202.714</b>	<b>210.201</b>
(Yr/yr % change)	25.1%	8.8%	8.3%	5.8%	4.6%	3.8%	3.7%
<b>TOTAL NON-RESIDENTIAL</b>	<b>465.544</b>	<b>456.376</b>	<b>472.081</b>	<b>487.888</b>	<b>501.902</b>	<b>515.028</b>	<b>528.276</b>
(Yr/yr % change)	13.5%	-2.0%	3.4%	3.3%	2.9%	2.6%	2.6%
<b>GRAND TOTAL</b>	<b>783.465</b>	<b>744.103</b>	<b>761.060</b>	<b>792.509</b>	<b>822.164</b>	<b>857.362</b>	<b>898.626</b>
(Yr/yr % change)	14.5%	-5.0%	2.3%	4.1%	3.7%	4.3%	4.8%

EXPLANATION: Table 3 conforms to the type-of-structure ordering adopted by many firms and organizations in the industry. Specifically, it breaks non-residential building into ICI work (i.e., industrial, commercial and institutional), since each has its own set of economic and demographic drivers.

Table 4 presents an alternative, perhaps more user-friendly and intuitive, type-of-structure ordering that matches how the data appears in ConstructConnect's on-line product 'Insight'.

Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect / Table: ConstructConnect.

## Table 4: U.S. Type-of-Structure Forecasts

Arranged to match the alphabetical category drop-down menus in INSIGHT (\$ Billions USD)

	Actuals		Forecasts				
	2017	2018	2019	2020	2021	2022	2023
<b>Summary</b>							
CIVIL	149.741	162.942	176.485	186.633	195.292	202.714	210.201
NON-RESIDENTIAL BUILDING	315.802	293.434	295.596	301.255	306.610	312.314	318.075
RESIDENTIAL	317.921	287.727	288.979	304.621	320.263	342.334	370.350
GRAND TOTAL	783.465	744.103	761.060	792.509	822.164	857.362	898.626
<b>Verticals</b>							
Airport	12.541	7.166	9.803	10.673	11.541	12.254	12.995
All Other Civil	15.627	24.096	27.998	29.459	30.808	31.684	32.530
Bridges	20.610	23.955	26.615	27.494	28.215	28.921	29.643
Dams / Canals / Marine Work	5.089	6.874	6.664	6.788	7.049	7.323	7.590
Power Infrastructure	10.731	7.436	8.310	8.959	9.621	10.095	10.421
Roads	53.103	63.579	67.046	70.732	73.337	76.055	79.003
Water and Sewage Treatment	32.041	29.836	30.048	32.527	34.720	36.383	38.020
CIVIL	149.741	162.942	176.485	186.633	195.292	202.714	210.201
(Yr/Yr % change)	25.1%	8.8%	8.3%	5.8%	4.6%	3.8%	3.7%
Offices (private)	28.974	27.874	29.676	30.636	29.972	28.922	28.644
Parking Garages	3.514	2.785	2.789	2.825	2.910	3.008	3.121
Transportation Terminals	3.839	5.207	7.799	8.726	9.224	9.663	10.071
Commercial	36.326	35.865	40.264	42.188	42.106	41.593	41.837
(Yr/Yr % change)	3.2%	-1.3%	12.3%	4.8%	-0.2%	-1.2%	0.6%
Amusement	7.854	8.214	8.416	8.794	9.165	9.520	9.819
Libraries / Museums	3.582	2.746	2.931	3.023	3.124	3.222	3.305
Religious	2.246	2.059	2.074	2.113	2.125	2.142	2.155
Sports Arenas / Convention Centers	15.493	7.001	8.531	9.515	9.674	9.389	8.816
Community	29.175	20.020	21.951	23.445	24.088	24.273	24.095
(Yr/Yr % change)	50.1%	-31.4%	9.6%	6.8%	2.7%	0.8%	-0.7%
College / University	22.270	18.824	17.726	17.931	18.133	18.300	18.511
Elementary / Pre School	18.885	19.233	20.074	21.377	21.879	22.365	22.806
Jr / Sr High School	26.549	30.287	32.051	32.671	32.623	32.359	31.974
Special / Vocational	1.749	1.718	1.844	1.955	2.024	2.086	2.147
Educational	69.453	70.063	71.695	73.934	74.659	75.111	75.437
(Yr/Yr % change)	-0.9%	0.9%	2.3%	3.1%	1.0%	0.6%	0.4%
Courthouses	2.698	1.833	1.890	1.976	2.046	2.112	2.180
Fire and Police Stations	2.858	3.048	3.108	3.233	3.396	3.562	3.672
Government Offices	10.572	10.833	11.353	11.602	11.919	12.143	12.351
Prisons	2.886	3.243	3.400	3.563	3.726	3.874	4.001
Government	19.013	18.957	19.751	20.373	21.087	21.691	22.204
(Yr/Yr % change)	-0.4%	-0.3%	4.2%	3.2%	3.5%	2.9%	2.4%
Industrial Labs / Labs / School Labs	2.994	3.066	3.304	3.528	3.687	3.844	3.996
Manufacturing	36.748	34.263	34.142	34.849	35.613	37.235	38.458
Warehouses	21.567	19.983	19.523	19.097	19.840	20.526	20.976
Industrial	61.309	57.312	56.970	57.474	59.140	61.605	63.430
(Yr/Yr % change)	57.6%	-6.5%	-0.6%	0.9%	2.9%	4.2%	3.0%
Hospitals / Clinics	16.628	15.787	15.025	15.984	16.979	18.027	19.066
Medical Misc.	10.909	10.337	10.036	10.474	10.778	11.069	11.292
Nursing Homes	11.906	10.181	10.221	10.587	10.967	11.311	11.620
Medical	39.443	36.305	35.282	37.045	38.724	40.406	41.979
(Yr/Yr % change)	1.2%	-8.0%	-2.8%	5.0%	4.5%	4.3%	3.9%
Military	4.776	5.571	6.247	6.934	7.306	7.596	7.826
(Yr/Yr % change)	2.1%	16.6%	12.1%	11.0%	5.4%	4.0%	3.0%
Hotels	28.645	25.524	20.447	16.716	15.611	15.241	15.556
Retail Misc.	7.661	6.981	7.071	7.178	7.292	7.399	7.489
Shopping	19.999	16.835	15.918	15.968	16.597	17.400	18.222
Retail	56.306	49.341	43.436	39.861	39.501	40.039	41.267
(Yr/Yr % change)	-12.3%	-12.4%	-12.0%	-8.2%	-0.9%	1.4%	3.1%
NON-RESIDENTIAL BUILDING	315.802	293.434	295.596	301.255	306.610	312.314	318.075
(Yr/Yr % change)	8.7%	-7.1%	0.7%	1.9%	1.8%	1.9%	1.8%
Multi-Family	117.978	86.532	80.057	85.780	89.958	94.556	98.056
Single-Family	199.943	201.195	208.922	218.841	230.305	247.778	272.294
RESIDENTIAL	317.921	287.727	288.979	304.621	320.263	342.334	370.350
(Yr/Yr % change)	16.2%	-9.5%	0.4%	5.4%	5.1%	6.9%	8.2%
GRAND TOTAL	783.465	744.103	761.060	792.509	822.164	857.362	898.626
(Yr/Yr % change)	14.5%	-5.0%	2.3%	4.1%	3.7%	4.3%	4.8%

EXPLANATION: Table 3 conforms to the type-of-structure ordering adopted by many firms and organizations in the industry. Specifically, it breaks non-residential building into ICI work (i.e., industrial, commercial and institutional), since each has its own set of economic and demographic drivers.

Table 4 presents an alternative, perhaps more user-friendly and intuitive, type-of-structure ordering that matches how the data appears in ConstructConnect's on-line product 'Insight'.

Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect / Table: ConstructConnect.

**Table 5: U.S. States, Total Construction Starts — ConstructConnect**

Actuals (Level in \$ Millions USD)		Forecasts (Year versus previous year % change)				
States (alphabetical by 2-letter code)	2018	2019	2020	2021	2022	2023
Alaska - AK	\$2,087	-9.9%	8.5%	3.3%	3.9%	3.8%
Alabama - AL	\$9,697	8.2%	6.7%	3.9%	3.7%	5.4%
Arkansas - AR	\$5,610	1.4%	13.3%	4.7%	5.2%	5.5%
Arizona - AZ	\$18,456	-12.0%	2.2%	3.5%	5.0%	6.0%
California - CA*	\$69,255	4.8%	5.3%	3.8%	3.9%	4.8%
Colorado - CO	\$19,099	0.5%	4.6%	4.2%	5.6%	6.3%
Connecticut - CT	\$5,202	-3.8%	17.5%	2.6%	3.0%	2.8%
District Of Columbia - DC	\$4,831	4.1%	5.0%	6.2%	1.7%	2.6%
Delaware - DE	\$2,482	-0.6%	3.8%	3.4%	4.3%	4.8%
Florida - FL*	\$53,568	9.1%	3.6%	3.9%	5.1%	5.9%
Georgia - GA	\$23,375	10.0%	3.4%	3.3%	4.5%	5.0%
Hawaii - HI	\$2,859	14.9%	12.2%	2.4%	2.9%	3.0%
Iowa - IA	\$6,932	-10.7%	5.5%	3.6%	2.8%	4.3%
Idaho - ID	\$5,125	-8.7%	-1.9%	3.4%	5.0%	5.9%
Illinois - IL	\$17,915	22.0%	2.3%	5.6%	2.3%	3.4%
Indiana - IN	\$13,325	15.6%	3.1%	2.6%	4.1%	3.9%
Kansas - KS	\$7,196	-5.4%	7.0%	3.2%	3.8%	3.9%
Kentucky - KY	\$9,135	-8.7%	5.9%	3.2%	4.2%	4.3%
Louisiana - LA	\$8,563	21.7%	1.1%	3.7%	4.5%	4.9%
Massachusetts - MA	\$14,667	8.1%	1.8%	2.4%	2.9%	2.9%
Maryland - MD	\$10,845	7.9%	5.1%	2.6%	2.8%	3.0%
Maine - ME	\$2,821	3.8%	5.6%	2.6%	2.5%	4.1%
Michigan - MI	\$15,626	-1.6%	2.7%	5.3%	4.4%	3.8%
Minnesota - MN	\$14,016	5.4%	4.9%	3.1%	3.7%	3.7%
Missouri - MO	\$11,450	-9.2%	2.5%	3.0%	3.6%	3.7%
Mississippi - MS	\$4,190	14.0%	4.7%	3.8%	3.6%	5.1%
Montana - MT	\$2,081	2.5%	3.2%	3.9%	4.4%	4.4%
North Carolina - NC	\$28,613	-2.2%	5.0%	4.3%	5.3%	5.8%
North Dakota - ND	\$3,666	-23.8%	9.7%	4.4%	3.8%	5.5%
Nebraska - NE	\$3,717	29.0%	6.5%	4.2%	3.1%	4.7%
New Hampshire - NH	\$2,577	-2.1%	8.6%	3.1%	3.9%	3.9%
New Jersey - NJ	\$12,192	-3.1%	7.8%	3.4%	3.7%	3.4%
New Mexico - NM	\$3,176	-0.8%	10.1%	3.1%	2.7%	4.4%
Nevada - NV	\$9,814	14.2%	-13.0%	3.2%	4.3%	5.4%
New York - NY*	\$37,127	25.0%	4.2%	3.4%	3.4%	3.7%
Ohio - OH	\$21,634	-9.1%	4.5%	3.0%	3.6%	3.5%
Oklahoma - OK	\$8,689	2.3%	8.4%	4.1%	4.8%	5.3%
Oregon - OR	\$9,920	8.1%	6.4%	4.0%	4.9%	5.2%
Pennsylvania - PA	\$21,110	8.2%	4.4%	2.9%	3.4%	3.5%
Rhode Island - RI	\$3,095	-43.0%	10.3%	3.0%	1.6%	2.9%
South Carolina - SC	\$12,788	4.5%	4.6%	3.8%	4.8%	5.5%
South Dakota - SD	\$2,250	34.1%	-13.2%	4.5%	3.8%	5.2%
Tennessee - TN	\$17,540	4.0%	2.9%	3.7%	4.8%	5.3%
Texas - TX*	\$93,669	11.1%	3.3%	4.4%	5.4%	6.0%
Utah - UT	\$11,402	-15.0%	-0.6%	3.8%	5.0%	5.5%
Virginia - VA	\$25,057	-16.0%	6.4%	2.8%	3.8%	4.4%
Vermont - VT	\$840	13.0%	4.1%	3.9%	3.6%	4.8%
Washington - WA	\$22,308	8.8%	5.9%	4.1%	5.1%	5.4%
Wisconsin - WI	\$23,220	-58.3%	3.0%	3.0%	3.6%	3.7%
West Virginia - WV	\$7,783	-63.5%	8.3%	3.6%	3.1%	3.7%
Wyoming - WY	\$1,513	10.7%	6.0%	3.7%	4.0%	4.1%
United States	\$744,103	2.3%	4.1%	3.7%	4.3%	4.8%

\*One in three Americans lives in one of the four shaded states, New York, Florida, Texas or California.  
 Sum of first column may not exactly equal total due to rounding.

Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect /  
 Table: ConstructConnect.

**Table 6: U.S. Four Largest States: Type-of-Structure Forecasts**  
(\$ Billions USD)


		Actuals		Forecasts				
		2017	2018	2019	2020	2021	2022	2023
New York	Residential	15.232	9.171	12.457	13.287	13.881	14.628	15.300
	Non-res Building	21.955	17.132	19.964	20.276	20.609	20.956	21.305
	Engineering/Civil	12.929	10.824	13.987	14.809	15.509	16.136	17.011
	Total	50.115	37.127	46.408	48.373	49.998	51.720	53.616
	(Yr vs previous yr % Change)	20.9%	-25.9%	25.0%	4.2%	3.4%	3.4%	3.7%
Florida	Residential	28.405	25.853	28.585	30.110	31.653	33.942	36.978
	Non-res Building	20.326	17.956	18.982	18.655	18.912	19.306	19.693
	Engineering/Civil	9.727	9.760	10.865	11.744	12.284	12.775	13.223
	Total	58.458	53.568	58.431	60.509	62.849	66.024	69.894
	(Yr vs previous yr % Change)	24.2%	-8.4%	9.1%	3.6%	3.9%	5.1%	5.9%
Texas	Residential	42.242	40.689	46.781	50.566	53.696	58.115	63.776
	Non-res Building	44.902	32.786	36.420	35.663	36.234	36.981	37.631
	Engineering/Civil	14.867	20.194	20.830	21.288	22.270	23.116	23.890
	Total	102.011	93.669	104.032	107.517	112.200	118.213	125.297
	(Yr vs previous yr % Change)	14.3%	-8.2%	11.1%	3.3%	4.4%	5.4%	6.0%
California	Residential	30.183	26.381	24.059	24.675	25.800	27.388	29.534
	Non-res Building	32.879	25.609	30.955	33.180	34.087	34.850	35.561
	Engineering/Civil	15.443	17.265	17.576	18.615	19.521	20.270	21.404
	Total	78.506	69.255	72.590	76.471	79.407	82.508	86.499
	(Yr vs previous yr % Change)	31.6%	-11.8%	4.8%	5.3%	3.8%	3.9%	4.8%

Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect.  
Table: ConstructConnect.

## Tweeted by ConstructConnect:

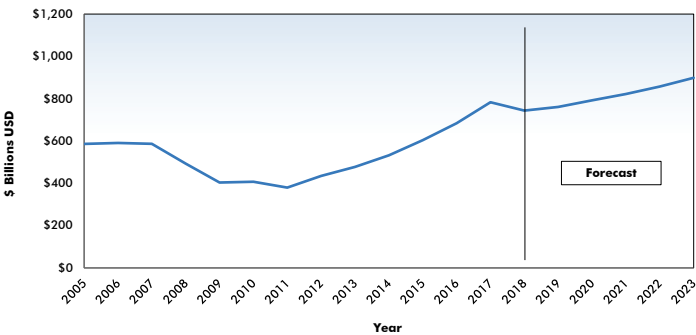
@ConstructConnx

Four states remain dominant in the U.S. for their population counts - California (39.6 million); Texas (28.7 million); Florida (21.3 million); and New York (19.5 million). One in three Americans lives in one of these four states.



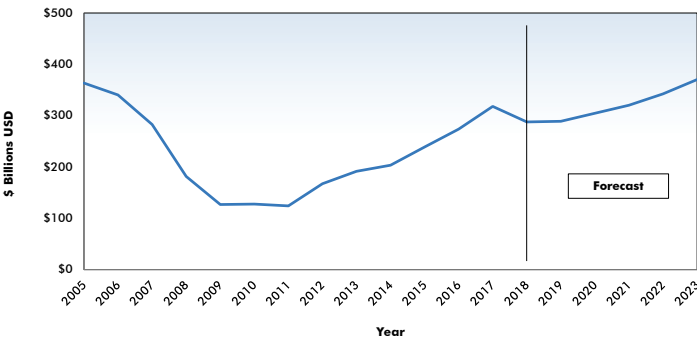


**Graph 1: U.S. Grand Total Construction Starts — ConstructConnect**



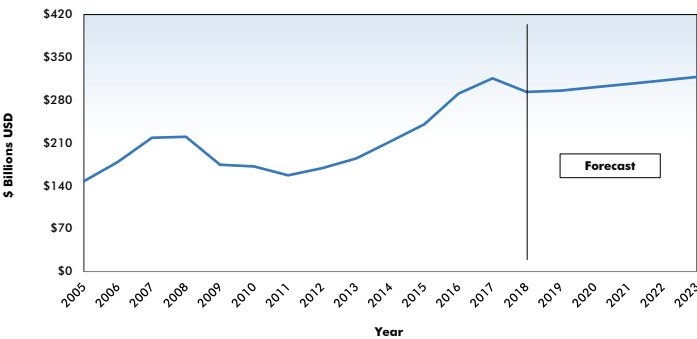
Source of actuals: ConstructConnect “Insight” / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 2: U.S. Total Residential Construction Starts — ConstructConnect**



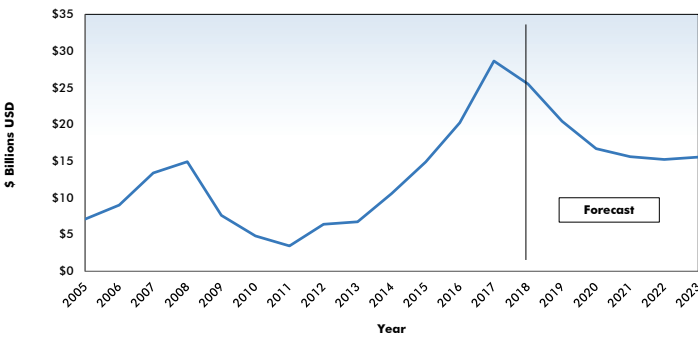
Source of actuals: ConstructConnect “Insight” / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 3: U.S. Total Non-Residential Building Starts — ConstructConnect**



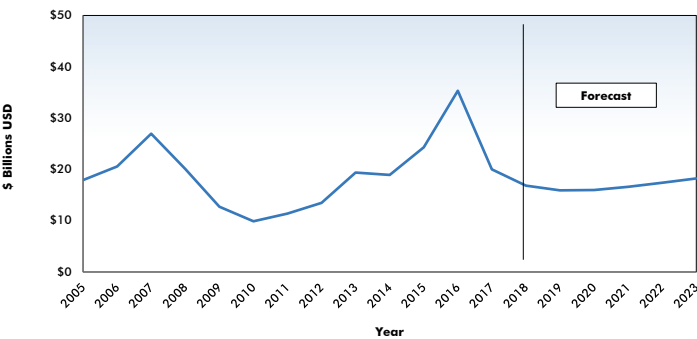
Source of actuals: ConstructConnect “Insight” / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 4: U.S. Hotel/Motel Construction Starts — ConstructConnect**



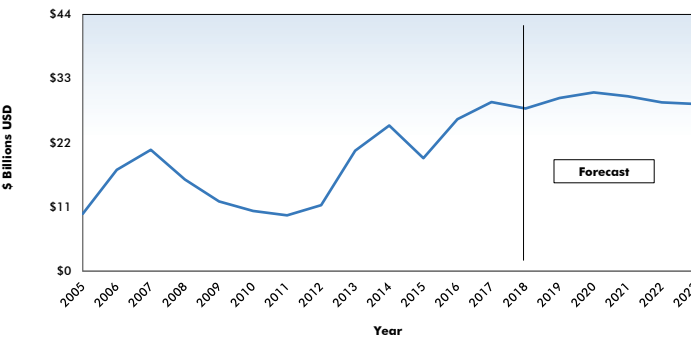
Source of actuals: ConstructConnect “Insight” / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 5: U.S. Shopping/Retail Construction Starts — ConstructConnect**



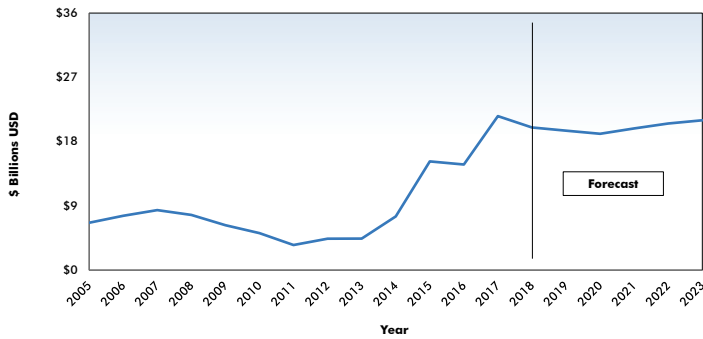
Source of actuals: ConstructConnect “Insight” / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 6: U.S. Private Office Building Construction Starts — ConstructConnect**



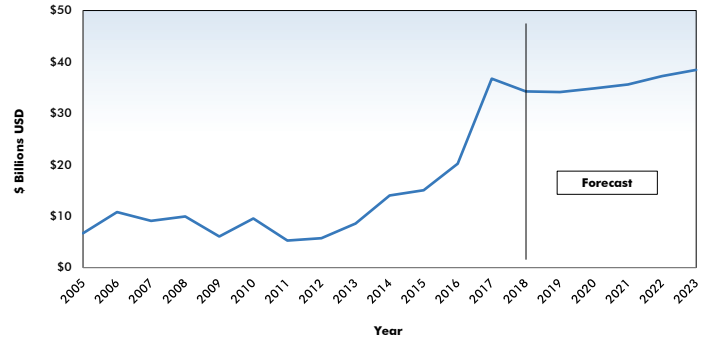
Source of actuals: ConstructConnect “Insight” / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 7: U.S. Warehouse Construction Starts — ConstructConnect**



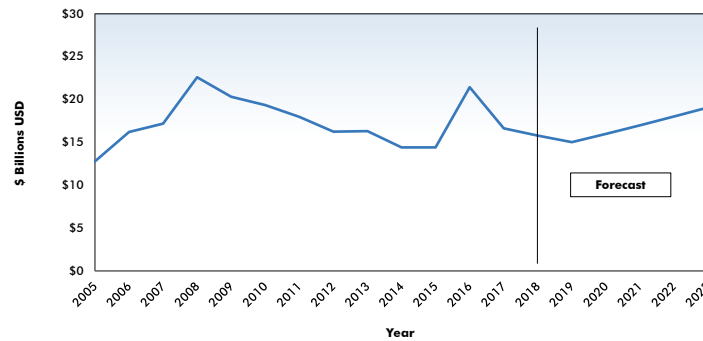
Source of actuals: ConstructConnect “Insight” / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 8: U.S. Industrial/Manufacturing Construction Starts — ConstructConnect**



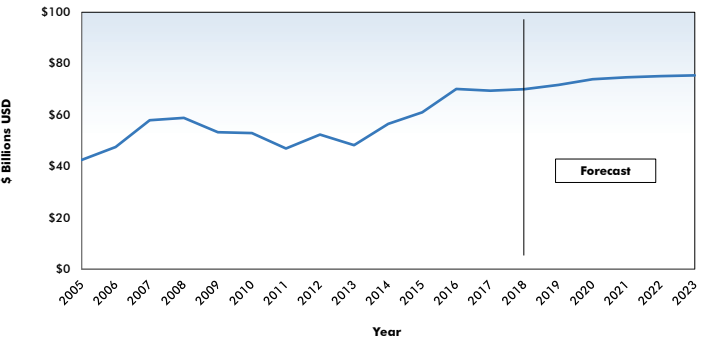
Source of actuals: ConstructConnect “Insight” / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 9: U.S. Hospital and Clinic Construction Starts — ConstructConnect**



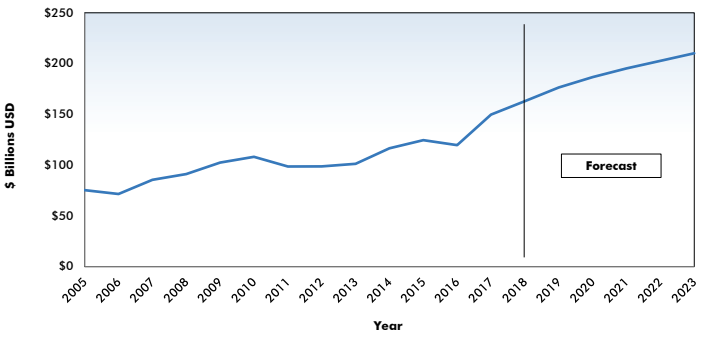
Source of actuals: ConstructConnect “Insight” / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 10: U.S. Total Educational Construction Starts — ConstructConnect**



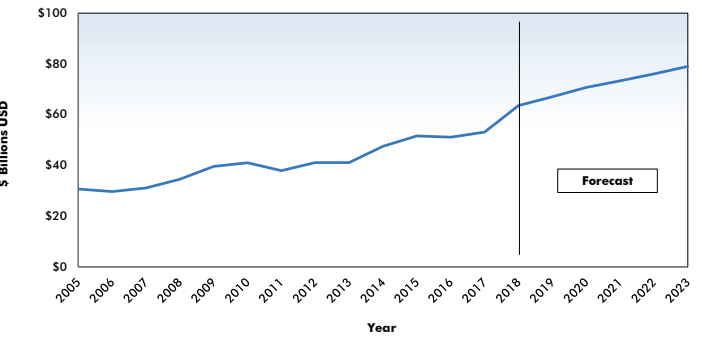
Source of actuals: ConstructConnect “Insight” / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 11: U.S. Total Heavy Engineering/Civil Construction Starts — ConstructConnect**



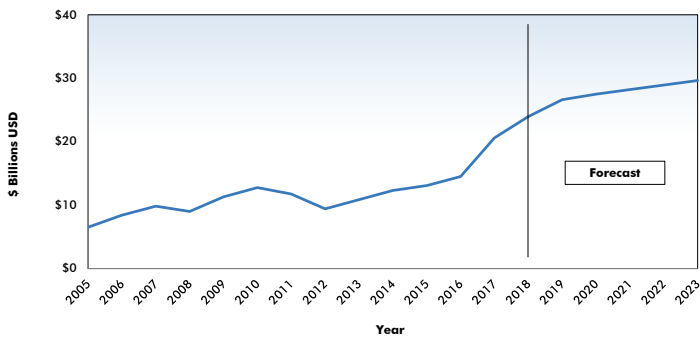
Source of actuals: ConstructConnect “Insight” / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 12: U.S. Roadwork Construction Starts — ConstructConnect**



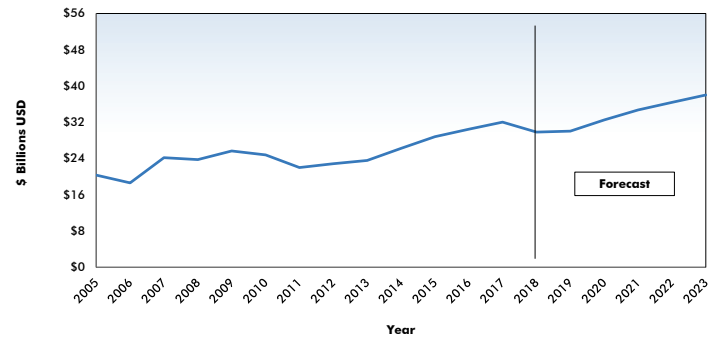
Source of actuals: ConstructConnect “Insight” / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 13: U.S. Bridge Construction Starts — ConstructConnect**



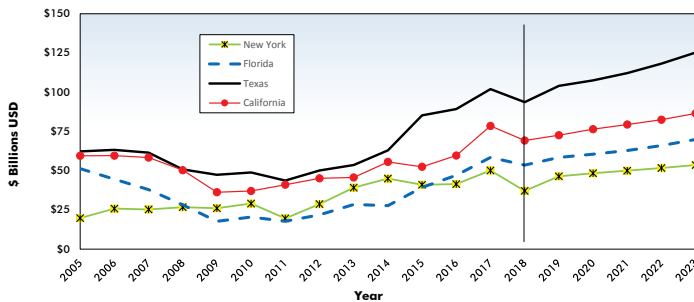
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 14: U.S. Water and Sewage Treatment Construction Starts — ConstructConnect**



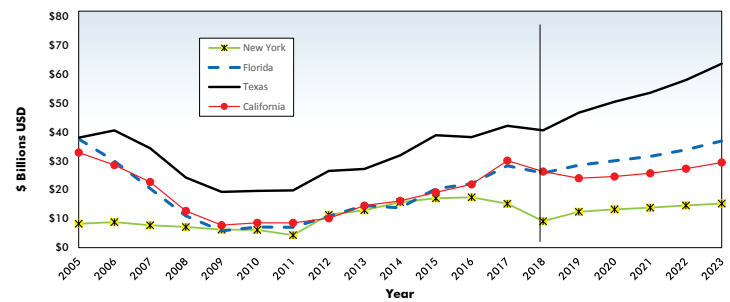
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 15: U.S. Four Largest States (by Population): Total Construction Starts — ConstructConnect**



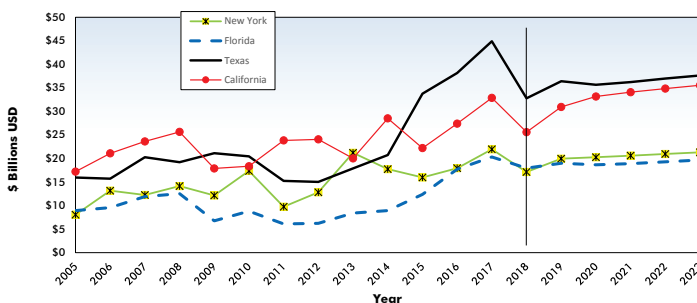
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 16: U.S. Four Largest States: Total Residential Construction Starts — ConstructConnect**



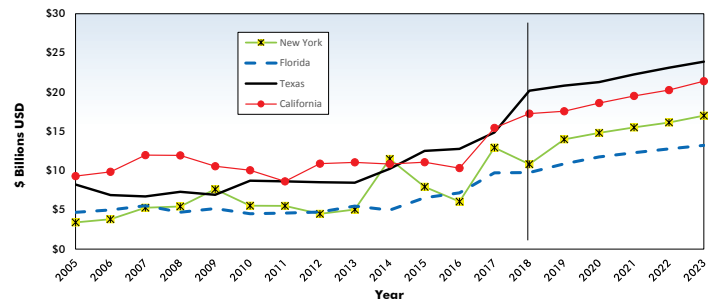
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 17: U.S. Four Largest States: Total Non-residential Building Starts — ConstructConnect**



Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 18: U.S. Four Largest States: Total Engineering/Civil Construction Starts — ConstructConnect**



Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Table 7: Canada Type-of-Structure Forecasts**  
 (\$ Billions CAD)

	Actuals		Forecasts				
	2017	2018	2019	2020	2021	2022	2023
Single-family	16.838	14.487	13.730	14.695	15.737	16.919	18.022
Multi-family	14.606	12.295	11.522	11.795	12.097	12.560	13.036
<b>TOTAL RESIDENTIAL</b>	<b>31.444</b>	<b>26.782</b>	<b>25.251</b>	<b>26.491</b>	<b>27.835</b>	<b>29.479</b>	<b>31.058</b>
(Yr/yr % change)	7.7%	-14.8%	-5.7%	4.9%	5.1%	5.9%	5.4%
Hotels/Motels	1.068	0.307	0.481	0.637	0.800	0.718	0.604
Private Offices	1.451	1.595	1.905	1.904	1.693	1.500	1.301
Governmental Offices	1.365	1.362	1.428	1.471	1.500	1.540	1.575
Shopping/Retail	1.019	0.720	0.640	0.623	0.644	0.671	0.699
Retail Miscellaneous	0.191	0.169	0.160	0.164	0.170	0.176	0.181
Parking Garages	0.166	0.189	0.195	0.208	0.217	0.226	0.236
Amusement	2.292	2.120	2.208	2.267	2.351	2.486	2.617
Warehouses	1.424	1.333	1.417	1.514	1.607	1.691	1.764
<b>TOTAL COMMERCIAL</b>	<b>8.976</b>	<b>7.795</b>	<b>8.434</b>	<b>8.787</b>	<b>8.982</b>	<b>9.008</b>	<b>8.977</b>
(Yr/yr % change)	15.7%	-13.2%	8.2%	4.2%	2.2%	0.3%	-0.3%
<b>TOTAL INDUSTRIAL (manufacturing)</b>	<b>3.441</b>	<b>18.131</b>	<b>8.521</b>	<b>8.527</b>	<b>7.791</b>	<b>7.009</b>	<b>6.030</b>
(Yr/yr % change)	414.8%	426.9%	-53.0%	0.1%	-8.6%	-10.0%	-14.0%
Religious	0.131	0.143	0.138	0.141	0.144	0.147	0.150
Hospitals/Clinics	4.186	2.372	2.660	2.926	3.204	3.502	3.817
MED misc	0.520	0.218	0.261	0.273	0.282	0.290	0.297
Transportation Terminals*	0.467	6.962	2.507	2.508	2.593	2.760	2.914
Police/Fire	1.035	1.978	1.541	1.595	1.648	1.693	1.734
Educational Facilities	4.119	3.764	4.118	4.302	4.454	4.562	4.651
<b>TOTAL INSTITUTIONAL</b>	<b>10.457</b>	<b>15.438</b>	<b>11.225</b>	<b>11.745</b>	<b>12.325</b>	<b>12.953</b>	<b>13.562</b>
(Yr/yr % change)	78.7%	47.6%	-27.3%	4.6%	4.9%	5.1%	4.7%
<b>TOTAL NON-RES BUILDING</b>	<b>22.874</b>	<b>41.363</b>	<b>28.179</b>	<b>29.059</b>	<b>29.098</b>	<b>28.970</b>	<b>28.569</b>
(Yr/yr % change)	60.2%	80.8%	-31.9%	3.1%	0.1%	-0.4%	-1.4%
Bridges	1.605	6.638	3.405	2.983	2.922	2.971	3.006
Dams/Canal/Marine	0.620	0.696	0.781	0.860	0.943	1.027	1.117
Water & Sewage Treatment	7.319	4.572	5.202	5.576	5.953	6.327	6.691
Roads	7.239	9.840	10.661	11.132	11.546	12.045	12.512
Power Infrastructure	3.699	2.479	3.776	4.673	5.555	6.126	6.671
All Other Civil (Oil & Gas etc.)	9.115	8.360	18.046	20.009	21.009	22.075	23.078
<b>TOTAL ENGINEERING</b>	<b>29.597</b>	<b>32.585</b>	<b>41.870</b>	<b>45.232</b>	<b>47.927</b>	<b>50.571</b>	<b>53.075</b>
(Yr/yr % change)	6.7%	10.1%	28.5%	8.0%	6.0%	5.5%	5.0%
<b>TOTAL NON-RESIDENTIAL</b>	<b>52.471</b>	<b>73.948</b>	<b>70.049</b>	<b>74.291</b>	<b>77.025</b>	<b>79.541</b>	<b>81.644</b>
(Yr/yr % change)	24.9%	40.9%	-5.3%	6.1%	3.7%	3.3%	2.6%
<b>GRAND TOTAL</b>	<b>83.915</b>	<b>100.730</b>	<b>95.301</b>	<b>100.782</b>	<b>104.860</b>	<b>109.019</b>	<b>112.702</b>
(Yr/yr % change)	17.8%	20.0%	-5.4%	5.8%	4.0%	4.0%	3.4%

\* With respect to Tables 3 and 7, 'transportation terminals' is the one type-of-structure that is categorized differently in Canada (institutional) than in the U.S. (commercial), for reasons having to do with government statistics.

EXPLANATION: Table 7 conforms to the type-of-structure ordering adopted by many firms and organizations in the industry. Specifically, it breaks non-residential building into ICI work (i.e., industrial, commercial and institutional), since each has its own set of economic and demographic drivers.

Table 8 presents an alternative, perhaps more user-friendly and intuitive, type-of-structure ordering that matches how the data appears in ConstructConnect's on-line product 'Insight'.

Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect.  
 Table: ConstructConnect.

## Table 8: Canada Type-of-Structure Forecasts

Arranged to match the alphabetical category drop-down menus in INSIGHT (\$ Billions CAD)

	Actuals		Forecasts				
	2017	2018	2019	2020	2021	2022	2023
<b>Summary</b>							
CIVIL	29.597	32.585	41.870	45.232	47.927	50.571	53.075
NON-RESIDENTIAL BUILDING	22.874	41.363	28.179	29.059	29.098	28.970	28.569
RESIDENTIAL	31.444	26.782	25.251	26.491	27.835	29.479	31.058
GRAND TOTAL	83.915	100.730	95.301	100.782	104.860	109.019	112.702
<b>Verticals</b>							
All Other Civil	9.115	8.360	18.046	20.009	21.009	22.075	23.078
Bridges	1.605	6.638	3.405	2.983	2.922	2.971	3.006
Dams / Canals / Marine Work	0.620	0.696	0.781	0.860	0.943	1.027	1.117
Power Infrastructure	3.699	2.479	3.776	4.673	5.555	6.126	6.671
Roads	7.239	9.840	10.661	11.132	11.546	12.045	12.512
Water and Sewage Treatment	7.319	4.572	5.202	5.576	5.953	6.327	6.691
CIVIL	29.597	32.585	41.870	45.232	47.927	50.571	53.075
(Yr/yr % change)	6.7%	10.1%	28.5%	8.0%	6.0%	5.5%	5.0%
Offices (private)	1.451	1.595	1.905	1.904	1.693	1.500	1.301
Parking Garages	0.166	0.189	0.195	0.208	0.217	0.226	0.236
Transportation Terminals	0.467	6.962	2.507	2.508	2.593	2.760	2.914
Commercial	2.084	8.746	4.607	4.620	4.503	4.487	4.451
(Yr/yr % change)	117.9%	319.6%	-47.3%	0.3%	-2.5%	-0.4%	-0.8%
Amusement	2.292	2.120	2.208	2.267	2.351	2.486	2.617
Religious	0.131	0.143	0.138	0.141	0.144	0.147	0.150
Community	2.423	2.264	2.345	2.409	2.495	2.632	2.767
(Yr/yr % change)	24.2%	-6.6%	3.6%	2.7%	3.6%	5.5%	5.1%
Educational	4.119	3.764	4.118	4.302	4.454	4.562	4.651
(Yr/yr % change)	15.4%	-8.6%	9.4%	4.5%	3.5%	2.4%	1.9%
Fire and Police Stations	1.035	1.978	1.541	1.595	1.648	1.693	1.734
Government Offices	1.365	1.362	1.428	1.471	1.500	1.540	1.575
Government	2.400	3.340	2.968	3.066	3.148	3.232	3.309
(Yr/yr % change)	32.1%	39.2%	-11.1%	3.3%	2.7%	2.7%	2.4%
Manufacturing	3.441	18.131	8.521	8.527	7.791	7.009	6.030
Warehouses	1.424	1.333	1.417	1.514	1.607	1.691	1.764
Industrial	4.865	19.464	9.938	10.041	9.398	8.700	7.794
(Yr/yr % change)	113.6%	300.1%	-48.9%	1.0%	-6.4%	-7.4%	-10.4%
Hospitals / Clinics	4.186	2.372	2.660	2.926	3.204	3.502	3.817
Medical Misc.	0.520	0.218	0.261	0.273	0.282	0.290	0.297
Medical	4.705	2.591	2.921	3.199	3.486	3.791	4.113
(Yr/yr % change)	195.2%	-44.9%	12.8%	9.5%	9.0%	8.8%	8.5%
Hotels	1.068	0.307	0.481	0.637	0.800	0.718	0.604
Retail Misc.	0.191	0.169	0.160	0.164	0.170	0.176	0.181
Shopping	1.019	0.720	0.640	0.623	0.644	0.671	0.699
Retail	2.278	1.195	1.282	1.423	1.614	1.565	1.484
(Yr/yr % change)	7.7%	-47.5%	7.2%	11.0%	13.4%	-3.0%	-5.2%
NON-RESIDENTIAL BUILDING	22.874	41.363	28.179	29.059	29.098	28.970	28.569
(Yr/yr % change)	60.2%	80.8%	-31.9%	3.1%	0.1%	-0.4%	-1.4%
Multi-Family	14.606	12.295	11.522	11.795	12.097	12.560	13.036
Single-Family	16.838	14.487	13.730	14.695	15.737	16.919	18.022
RESIDENTIAL	31.444	26.782	25.251	26.491	27.835	29.479	31.058
(Yr/yr % change)	7.7%	-14.8%	-5.7%	4.9%	5.1%	5.9%	5.4%
TOTAL NON-RESIDENTIAL	52.471	73.948	70.049	74.291	77.025	79.541	81.644
(Yr/yr % change)	24.9%	40.9%	-5.3%	6.1%	3.7%	3.3%	2.6%
GRAND TOTAL	83.915	100.730	95.301	100.782	104.860	109.019	112.702
(Yr/yr % change)	17.8%	20.0%	-5.4%	5.8%	4.0%	4.0%	3.4%

EXPLANATION: Table 7 conforms to the type-of-structure ordering adopted by many firms and organizations in the industry. Specifically, it breaks non-residential building into ICI work (i.e., industrial, commercial and institutional), since each has its own set of economic and demographic drivers.

Table 8 presents an alternative, perhaps more user-friendly and intuitive, type-of-structure ordering that matches how the data appears in ConstructConnect's on-line product 'Insight'.

Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect / Table: ConstructConnect.



**Table 9: Canadian Provinces, Total Construction Starts — ConstructConnect**

Regions/Provinces (East to West)	Actuals (Level in \$ Millions CAD)	Forecasts (Year versus previous year % change)				
	2018	2019	2020	2021	2022	2023
Atlantic region	\$4,798	35.3%	6.3%	10.8%	4.0%	3.3%
Quebec	\$20,365	-30.4%	3.8%	0.3%	3.9%	4.1%
Ontario	\$32,479	-18.2%	5.5%	0.0%	3.4%	3.0%
Manitoba	\$2,090	33.7%	6.4%	1.9%	3.5%	2.6%
Saskatchewan	\$2,266	37.3%	18.6%	1.0%	3.2%	3.1%
Alberta	\$15,395	28.9%	4.8%	7.4%	4.1%	4.3%
British Columbia	\$23,338	-4.4%	6.1%	7.0%	4.7%	2.7%
Canada	\$100,730	-5.4%	5.8%	4.0%	4.0%	3.4%

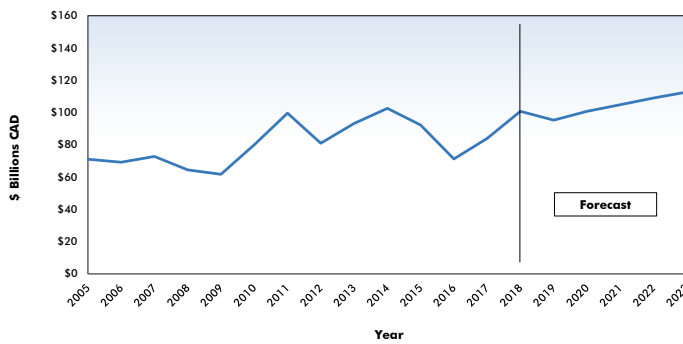
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect.  
 Table: ConstructConnect.

**Table 10: Canada Four Largest Provinces: Type-of-Structure Forecasts**  
 (\$ Billions CAD)

		Actuals		Forecasts				
		2017	2018	2019	2020	2021	2022	2023
Quebec	Residential	4.573	3.797	3.961	3.901	3.969	4.169	4.373
	Non-res Building	4.921	11.646	4.956	5.273	5.119	5.195	5.287
	Engineering/Civil	4.449	4.922	5.260	5.542	5.674	5.970	6.298
	Total	13.943	20.365	14.177	14.715	14.763	15.333	15.959
	(Yr vs previous yr % Change)	48.0%	46.1%	-30.4%	3.8%	0.3%	3.9%	4.1%
Ontario	Residential	14.011	12.041	9.220	9.234	9.471	9.943	10.393
	Non-res Building	6.677	8.150	6.731	7.620	7.258	7.213	7.043
	Engineering/Civil	5.305	12.287	10.628	11.186	11.323	11.856	12.440
	Total	25.992	32.479	26.578	28.041	28.052	29.012	29.876
	(Yr vs previous yr % Change)	-6.3%	25.0%	-18.2%	5.5%	0.0%	3.4%	3.0%
Alberta	Residential	4.716	3.382	4.010	4.948	5.477	5.944	6.337
	Non-res Building	5.488	6.791	4.670	5.065	5.326	5.432	5.460
	Engineering/Civil	11.510	5.222	11.162	10.787	11.530	11.868	12.453
	Total	21.714	15.395	19.842	20.799	22.333	23.244	24.249
	(Yr vs previous yr % Change)	85.0%	-29.1%	28.9%	4.8%	7.4%	4.1%	4.3%
British Columbia	Residential	5.924	5.562	5.625	5.746	6.082	6.393	6.750
	Non-res Building	2.555	11.660	7.925	7.001	6.977	6.680	6.365
	Engineering/Civil	2.953	6.116	8.757	10.919	12.254	13.430	14.115
	Total	11.433	23.338	22.307	23.665	25.313	26.504	27.230
	(Yr vs previous yr % Change)	8.7%	104.1%	-4.4%	6.1%	7.0%	4.7%	2.7%

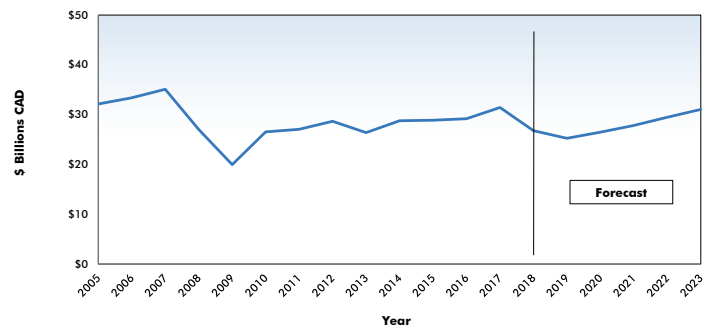
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect.  
 Table: ConstructConnect.

**Graph 19: Canadian Grand Total Construction Starts — ConstructConnect**



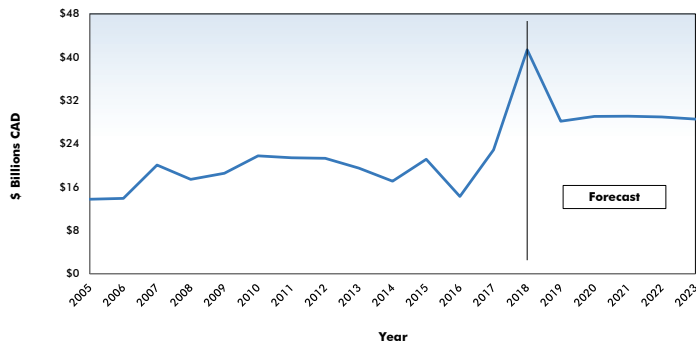
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 20: Canadian Residential Construction Starts — ConstructConnect**



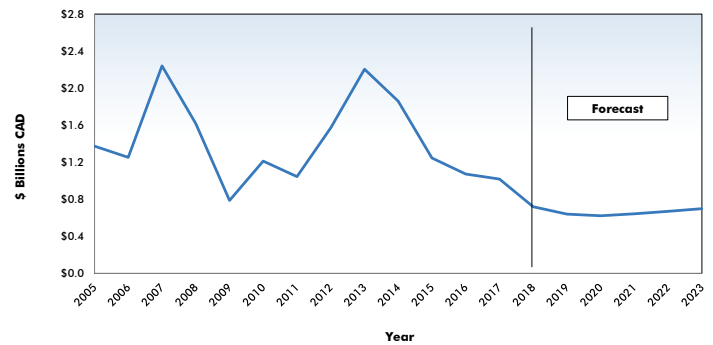
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 21: Canadian Non-Residential Building Starts — ConstructConnect**



Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 22: Canadian Shopping/Retail Construction Starts — ConstructConnect**



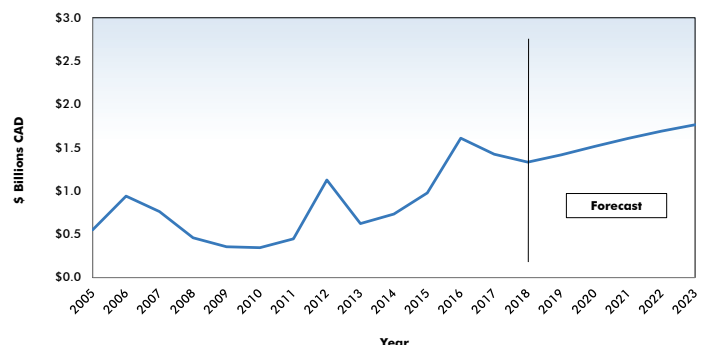
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 23: Canadian Private Offices Construction Starts — ConstructConnect**



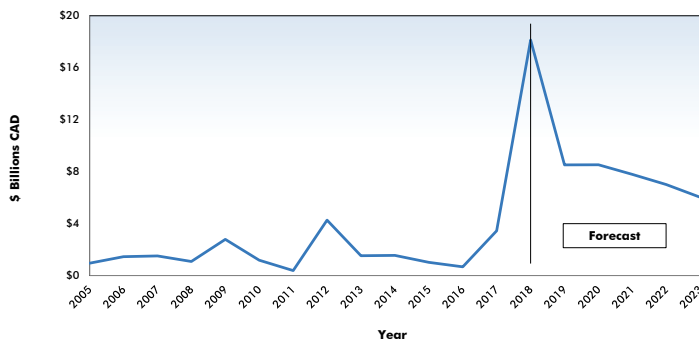
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 24: Canadian Warehouse Construction Starts — ConstructConnect**



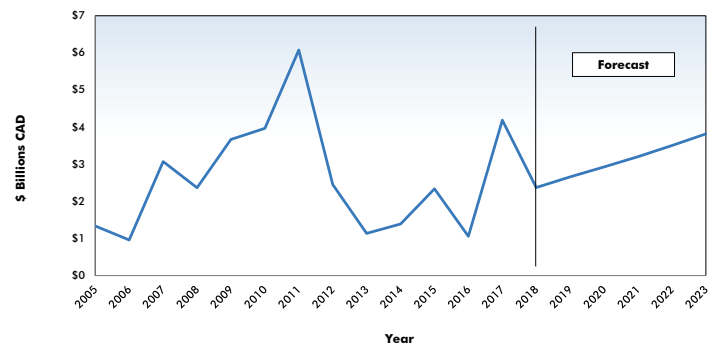
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 25: Canadian Industrial/Manufacturing Construction Starts — ConstructConnect**



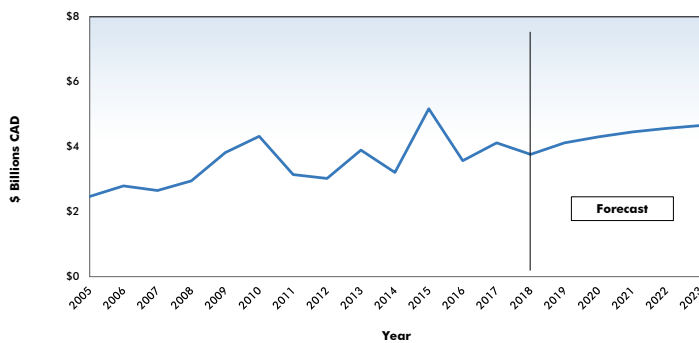
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 26: Canadian Hospital/Clinic Construction Starts — ConstructConnect**



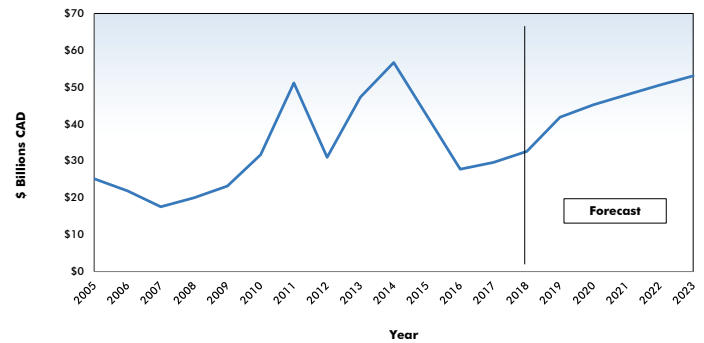
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 27: Canadian Education Construction Starts — ConstructConnect**



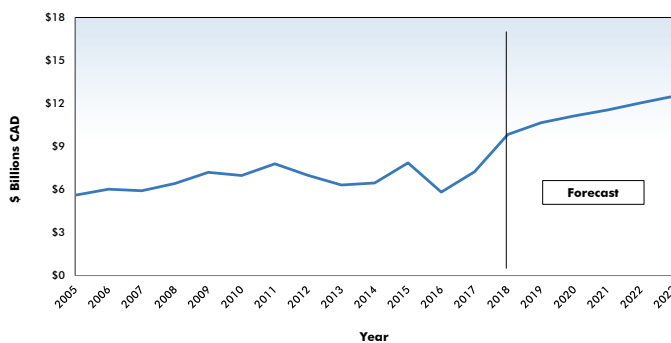
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 28: Canadian Engineering Construction Starts — ConstructConnect**



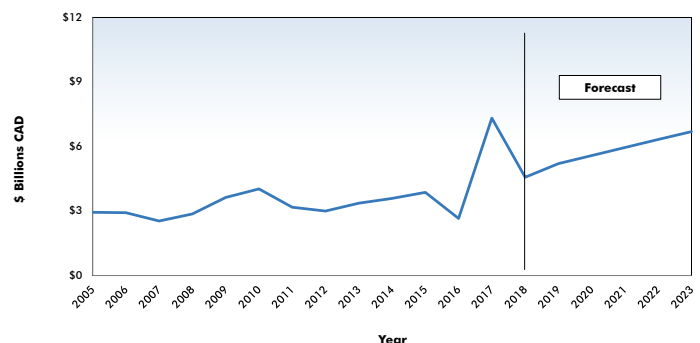
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 29: Canadian Roadwork Construction Starts — ConstructConnect**



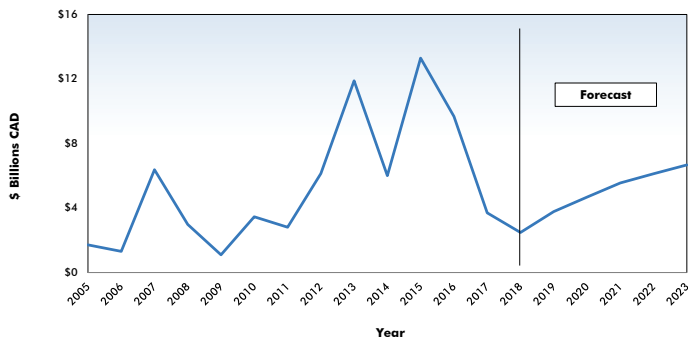
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 30: Canadian Water and Sewage Construction Starts — ConstructConnect**



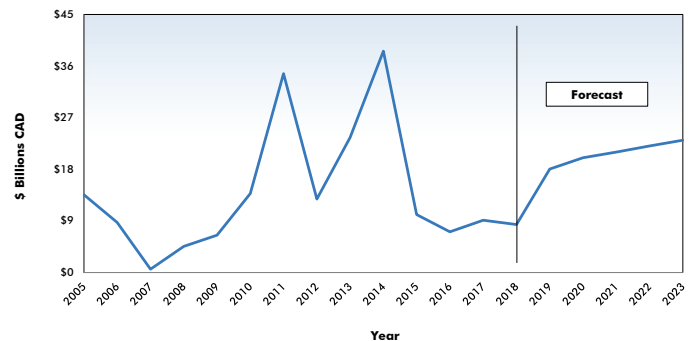
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 31: Canadian Power Infrastructure Construction Starts — ConstructConnect**



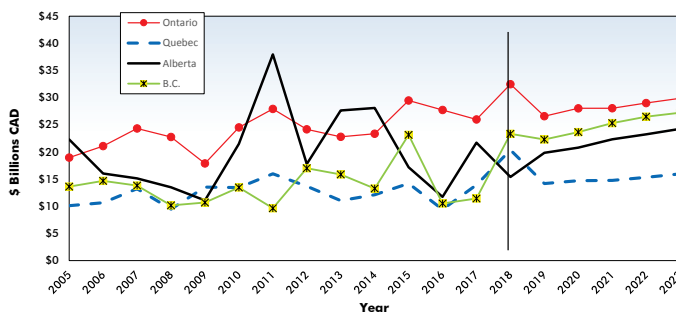
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 32: Canadian Oil Sands, Pipelines Construction Starts — ConstructConnect**



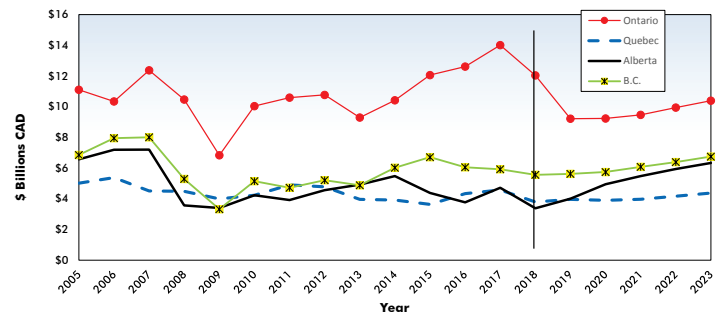
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 33: Canada Four Largest Provinces (by Population): Total Construction Starts — ConstructConnect**



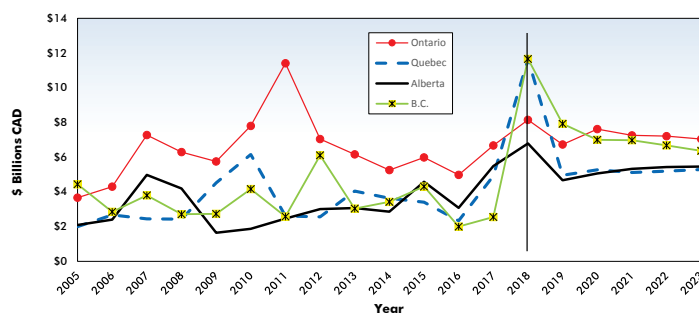
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 34: Canada Four Largest Provinces: Total Residential Construction Starts — ConstructConnect**



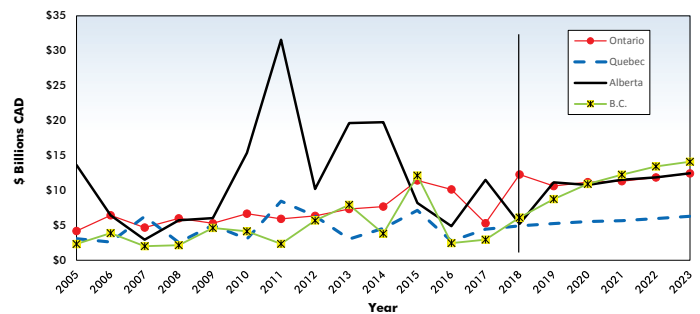
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 35: Canada Four Largest Provinces: Total Non-residential Building Starts — ConstructConnect**



Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 36: Canada Four Largest Provinces: Total Engineering/Civil Construction Starts — ConstructConnect**



Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Table 11: U.S. Type-of-Structure Forecasts**

(Square Feet Millions)

	Actuals		Forecasts				
	2017	2018	2019	2020	2021	2022	2023
Single-family	1,653.2	1,663.6	1,727.4	1,809.5	1,904.2	2,048.7	2,251.4
Multi-family	651.8	479.7	436.0	472.2	496.5	522.2	541.6
<b>TOTAL RESIDENTIAL</b>	<b>2,305.0</b>	<b>2,143.3</b>	<b>2,163.4</b>	<b>2,281.6</b>	<b>2,400.7</b>	<b>2,570.9</b>	<b>2,793.1</b>
(Yr/yr % change)	12.3%	-7.0%	0.9%	5.5%	5.2%	7.1%	8.6%
Hotels/Motels	158.5	104.2	85.1	69.1	64.5	62.9	64.2
Shopping/Retail	89.7	69.3	68.0	66.9	69.2	72.4	75.8
Parking Garages	30.8	27.4	27.4	27.0	27.6	28.5	29.6
Amusement	24.2	26.8	26.6	27.9	29.1	30.3	31.2
Private Offices	107.1	83.5	99.3	112.5	107.9	102.2	97.1
Governmental Offices	15.4	15.6	16.0	16.4	16.9	17.2	17.5
Laboratories (Schools & Industrial)	6.5	5.3	5.9	6.0	6.2	6.4	6.6
Warehouses	214.0	186.4	182.9	178.2	184.9	191.3	195.5
Sports Stadium/Convention Center	28.5	13.1	15.9	17.2	17.3	16.8	15.8
Transportation Terminals	7.3	5.5	9.0	10.4	11.4	12.3	13.1
<b>TOTAL COMMERCIAL</b>	<b>682.1</b>	<b>537.0</b>	<b>536.2</b>	<b>531.6</b>	<b>535.0</b>	<b>540.3</b>	<b>546.5</b>
(Yr/yr % change)	0.4%	-21.3%	-0.1%	-0.9%	0.6%	1.0%	1.2%
<b>TOTAL INDUSTRIAL (manufacturing)</b>	<b>92.3</b>	<b>92.3</b>	<b>90.1</b>	<b>94.2</b>	<b>96.8</b>	<b>101.4</b>	<b>104.7</b>
(Yr/yr % change)	-11.4%	0.0%	-2.4%	4.6%	2.8%	4.7%	3.3%
Religious	7.6	5.7	5.6	5.8	5.8	5.9	5.9
Hospitals/Clinics	26.5	22.7	19.9	21.5	22.9	24.3	25.8
Nursing Homes/Assisted Living	54.3	43.1	43.4	44.9	46.5	47.9	49.2
Libraries/Museums	3.8	3.7	3.9	4.0	4.2	4.4	4.5
Courthouse	2.5	2.7	2.8	2.9	3.0	3.1	3.1
Police/Fire	8.1	7.6	7.6	8.0	8.4	8.8	9.0
Prisons	4.9	4.6	4.8	4.8	5.0	5.2	5.4
Military	12.8	11.4	11.5	12.7	13.3	13.9	14.3
Educational Facilities	161.6	152.7	158.8	162.9	164.3	165.2	165.9
MED misc	24.5	21.3	20.7	21.6	22.2	22.8	23.2
<b>TOTAL INSTITUTIONAL</b>	<b>306.6</b>	<b>275.5</b>	<b>279.0</b>	<b>289.0</b>	<b>295.5</b>	<b>301.4</b>	<b>306.4</b>
(Yr/yr % change)	0.8%	-10.1%	1.3%	3.6%	2.3%	2.0%	1.7%
Miscellaneous Non-Res Building	28.4	25.2	26.1	26.0	26.3	26.6	27.0
<b>TOTAL NON-RES BLDG</b>	<b>1,109.3</b>	<b>930.0</b>	<b>931.5</b>	<b>940.8</b>	<b>953.6</b>	<b>969.7</b>	<b>984.6</b>
(Yr/yr % change)	-1.0%	-16.2%	0.2%	1.0%	1.4%	1.7%	1.5%
<b>RESIDENTIAL + NON-RES BLDG</b>	<b>3,414.3</b>	<b>3,073.3</b>	<b>3,094.9</b>	<b>3,222.5</b>	<b>3,354.4</b>	<b>3,540.6</b>	<b>3,777.6</b>
(Yr/yr % change)	7.6%	-10.0%	0.7%	4.1%	4.1%	5.6%	6.7%

EXPLANATION: Table 11 conforms to the type-of-structure ordering adopted by many firms and organizations in the industry. Specifically, it breaks non-residential building into ICI work (i.e., industrial, commercial and institutional), since each has its own set of economic and demographic drivers.

Table 12 presents an alternative, perhaps more user-friendly and intuitive, type-of-structure ordering that matches how the data appears in ConstructConnect's on-line product 'Insight'.

The square footage forecasts are largely determined by dividing the dollar value forecasts by an average dollar-per-square-foot value. The underlying dollar-per-square-foot calculation is based on the most relevant of current data. While the projected dollar values are generated through econometric modeling driven by key economic and demographic variables, both the dollar value and square footage forecasts also allow for discretionary overrides when warranted by extraordinary circumstances, such as unique mega project start-ups.

Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect / Table: ConstructConnect.



**Table 12: U.S. Type-of-Structure Forecasts**

Arranged to match the alphabetical category drop-down menus in INSIGHT (Square Feet Millions)

	Actuals		Forecasts				
	2017	2018	2019	2020	2021	2022	2023
<b>Summary</b>							
NON-RESIDENTIAL BUILDING	1,109.3	930.0	931.5	940.8	953.6	969.7	984.6
RESIDENTIAL	2,305.0	2,143.3	2,163.4	2,281.6	2,400.7	2,570.9	2,793.1
RESIDENTIAL + NON-RESIDENTIAL BUILDING	3,414.3	3,073.3	3,094.9	3,222.5	3,354.4	3,540.6	3,777.6
<b>Verticals</b>							
Offices (private)	107.1	83.5	99.3	112.5	107.9	102.2	97.1
Parking Garages	30.8	27.4	27.4	27.0	27.6	28.5	29.6
Transportation Terminals	7.3	5.5	9.0	10.4	11.4	12.3	13.1
Commercial	145.2	116.4	135.8	150.0	146.9	143.0	139.9
(Yr/yr % change)	-1.4%	-19.8%	16.7%	10.4%	-2.1%	-2.7%	-2.2%
Amusement	24.2	26.8	26.6	27.9	29.1	30.3	31.2
Libraries / Museums	3.8	3.7	3.9	4.0	4.2	4.4	4.5
Religious	7.6	5.7	5.6	5.8	5.8	5.9	5.9
Sports Arenas / Convention Centers	28.5	13.1	15.9	17.2	17.3	16.8	15.8
Community	64.2	49.2	52.0	54.9	56.5	57.3	57.4
(Yr/yr % change)	9.2%	-23.2%	5.6%	5.6%	2.9%	1.4%	0.1%
College / University	46.2	37.6	36.0	36.0	36.3	36.6	37.0
Elementary / Pre School	47.6	43.6	46.4	49.1	50.2	51.3	52.3
Jr / Sr High School	61.9	67.4	71.9	73.1	73.0	72.4	71.5
Special / Vocational	5.9	4.1	4.5	4.7	4.8	5.0	5.1
Educational	161.6	152.7	158.8	162.9	164.3	165.2	165.9
(Yr/yr % change)	-5.2%	-5.5%	4.0%	2.6%	0.8%	0.6%	0.4%
Courthouses	2.5	2.7	2.8	2.9	3.0	3.1	3.1
Fire and Police Stations	8.1	7.6	7.6	8.0	8.4	8.8	9.0
Government Offices	15.4	15.6	16.0	16.4	16.9	17.2	17.5
Prisons	4.9	4.6	4.8	4.8	5.0	5.2	5.4
Government	30.9	30.5	31.2	32.1	33.2	34.2	35.1
(Yr/yr % change)	-1.4%	-1.5%	2.5%	2.8%	3.5%	3.0%	2.4%
Industrial Labs / Labs / School Labs	6.5	5.3	5.9	6.0	6.2	6.4	6.6
Manufacturing	92.3	92.3	90.1	94.2	96.8	101.4	104.7
Warehouses	214.0	186.4	182.9	178.2	184.9	191.3	195.5
Industrial	312.8	284.0	278.8	278.3	287.9	299.0	306.8
(Yr/yr % change)	17.5%	-9.2%	-1.8%	-0.2%	3.4%	3.9%	2.6%
Hospitals / Clinics	26.5	22.7	19.9	21.5	22.9	24.3	25.8
Medical Misc.	24.5	21.3	20.7	21.6	22.2	22.8	23.2
Nursing Homes	54.3	43.1	43.4	44.9	46.5	47.9	49.2
Medical	105.3	87.2	84.0	87.9	91.5	95.0	98.2
(Yr/yr % change)	2.2%	-17.2%	-3.6%	4.7%	4.1%	3.8%	3.3%
Military	12.8	11.4	11.5	12.7	13.3	13.9	14.3
(Yr/yr % change)	43.4%	-10.6%	1.1%	10.1%	5.1%	3.9%	3.0%
Hotels	158.5	104.2	85.1	69.1	64.5	62.9	64.2
Retail Misc.	28.4	25.2	26.1	26.0	26.3	26.6	27.0
Shopping	89.7	69.3	68.0	66.9	69.2	72.4	75.8
Retail	276.6	198.7	179.3	162.0	159.9	162.0	167.0
(Yr/yr % change)	-17.4%	-28.2%	-9.8%	-9.6%	-1.3%	1.3%	3.1%
NON-RESIDENTIAL BUILDING	1,109.3	930.0	931.5	940.8	953.6	969.7	984.6
(Yr/yr % change)	-1.0%	-16.2%	0.2%	1.0%	1.4%	1.7%	1.5%
Multi-Family	651.8	479.7	436.0	472.2	496.5	522.2	541.6
Single-Family	1,653.2	1,663.6	1,727.4	1,809.5	1,904.2	2,048.7	2,251.4
RESIDENTIAL	2,305.0	2,143.3	2,163.4	2,281.6	2,400.7	2,570.9	2,793.1
(Yr/yr % change)	12.3%	-7.0%	0.9%	5.5%	5.2%	7.1%	8.6%
RESIDENTIAL + NON-RESIDENTIAL BUILDING	3,414.3	3,073.3	3,094.9	3,222.5	3,354.4	3,540.6	3,777.6
(Yr/yr % change)	7.6%	-10.0%	0.7%	4.1%	4.1%	5.6%	6.7%

EXPLANATION: Table 11 conforms to the type-of-structure ordering adopted by many firms and organizations in the industry. Specifically, it breaks non-residential building into ICI work (i.e., industrial, commercial and institutional), since each has its own set of economic and demographic drivers.

Table 12 presents an alternative, perhaps more user-friendly and intuitive, type-of-structure ordering that matches how the data appears in ConstructConnect's on-line product 'Insight'.

Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect / Table: ConstructConnect.

**Table 13: Canada Type-of-Structure Forecasts**

(Square Feet Millions)

	Actuals		Forecasts				
	2017	2018	2019	2020	2021	2022	2023
Single-family	144.9	124.8	118.3	126.6	135.5	145.7	155.2
Multi-family	79.4	65.5	61.7	63.0	64.6	67.1	69.6
<b>TOTAL RESIDENTIAL</b>	<b>224.3</b>	<b>190.3</b>	<b>180.0</b>	<b>189.6</b>	<b>200.1</b>	<b>212.8</b>	<b>224.8</b>
(Yr/yr % change)	5.6%	-15.1%	-5.4%	5.3%	5.6%	6.3%	5.7%
Hotels/Motels	4.2	1.6	2.2	2.8	3.4	3.1	2.8
Private Offices	5.9	7.7	9.7	9.6	8.5	7.5	6.5
Governmental Offices	1.8	1.5	1.6	1.7	1.7	1.8	1.8
Shopping/Retail	7.3	5.9	4.8	4.8	5.0	5.2	5.4
Retail Miscellaneous	1.2	1.1	1.0	1.0	1.1	1.1	1.2
Parking Garages	1.1	0.2	0.4	0.5	0.7	0.8	1.0
Amusement	5.5	4.2	4.3	4.5	4.7	4.9	5.1
Warehouses	11.4	11.0	11.8	12.5	13.1	13.6	14.0
<b>TOTAL COMMERCIAL</b>	<b>38.5</b>	<b>33.1</b>	<b>35.8</b>	<b>37.5</b>	<b>38.2</b>	<b>38.0</b>	<b>37.8</b>
(Yr/yr % change)	5.1%	-13.8%	8.1%	4.5%	1.9%	-0.3%	-0.7%
<b>TOTAL INDUSTRIAL (manufacturing)</b>	<b>5.1</b>	<b>5.9</b>	<b>3.0</b>	<b>3.0</b>	<b>3.0</b>	<b>3.0</b>	<b>3.0</b>
(Yr/yr % change)	85.3%	16.6%	-49.1%	-0.1%	0.0%	0.0%	0.0%
Religious	0.6	0.3	0.2	0.2	0.2	0.2	0.2
Hospitals/Clinics	10.8	7.0	7.0	7.8	8.4	8.9	9.4
MED misc	1.3	0.5	0.5	0.5	0.5	0.6	0.6
Transportation Terminals*	0.7	4.0	1.6	1.6	1.7	1.8	1.9
Police/Fire	2.1	1.6	1.4	1.4	1.5	1.6	1.7
Educational Facilities	9.7	10.7	12.7	12.6	12.9	13.2	13.4
<b>TOTAL INSTITUTIONAL</b>	<b>25.2</b>	<b>24.1</b>	<b>23.4</b>	<b>24.1</b>	<b>25.3</b>	<b>26.3</b>	<b>27.2</b>
(Yr/yr % change)	58.7%	-4.3%	-2.8%	3.0%	4.9%	4.0%	3.6%
<b>TOTAL NON-RES BLDG</b>	<b>68.7</b>	<b>63.2</b>	<b>62.3</b>	<b>64.6</b>	<b>66.5</b>	<b>67.4</b>	<b>68.0</b>
(Yr/yr % change)	24.5%	-8.1%	-1.4%	3.7%	2.9%	1.3%	1.0%
<b>RESIDENTIAL + NON-RES BLDG</b>	<b>293.0</b>	<b>253.5</b>	<b>242.2</b>	<b>254.2</b>	<b>266.6</b>	<b>280.1</b>	<b>292.8</b>
(Yr/yr % change)	9.5%	-13.5%	-4.4%	4.9%	4.9%	5.1%	4.5%

\* With respect to Tables 11 and 13, 'transportation terminals' is the one type-of-structure that is categorized differently in Canada (institutional) than in the U.S. (commercial), for reasons having to do with government statistics.

EXPLANATION: Table 13 conforms to the type-of-structure ordering adopted by many firms and organizations in the industry. Specifically, it breaks non-residential building into ICI work (i.e., industrial, commercial and institutional), since each has its own set of economic and demographic drivers.

Table 14 presents an alternative, perhaps more user-friendly and intuitive, type-of-structure ordering that matches how the data appears in ConstructConnect's on-line product 'Insight'.

Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect / Table: ConstructConnect.

**Table 14: Canada Type-of-Structure Forecasts**

Arranged to match the alphabetical category drop-down menus in INSIGHT (Square Feet Millions)

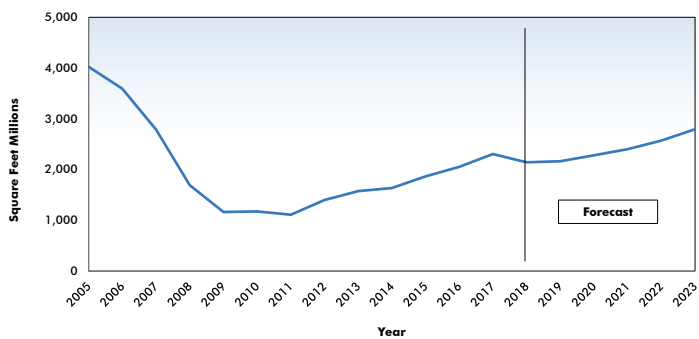
	Actuals		Forecasts				
	2017	2018	2019	2020	2021	2022	2023
<b>Summary</b>							
NON-RESIDENTIAL BUILDING	68.7	63.2	62.3	64.6	66.5	67.4	68.0
RESIDENTIAL	224.3	190.3	180.0	189.6	200.1	212.8	224.8
RESIDENTIAL + NON-RESIDENTIAL BUILDING	293.0	253.5	242.2	254.2	266.6	280.1	292.8
<b>Verticals</b>							
Offices (private)	5.9	7.7	9.7	9.6	8.5	7.5	6.5
Parking Garages	1.1	0.2	0.4	0.5	0.7	0.8	1.0
Transportation Terminals	0.7	4.0	1.6	1.6	1.7	1.8	1.9
Commercial	7.7	12.0	11.7	11.6	10.8	10.1	9.4
(Yr/Yr % change)	117.9%	54.8%	-2.0%	-0.8%	-7.1%	-6.5%	-7.0%
Amusement	5.5	4.2	4.3	4.5	4.7	4.9	5.1
Religious	0.6	0.3	0.2	0.2	0.2	0.2	0.2
Community	6.1	4.5	4.5	4.7	5.0	5.1	5.3
(Yr/Yr % change)	3.6%	-26.3%	0.9%	4.9%	4.6%	3.7%	3.9%
Educational	9.7	10.7	12.7	12.6	12.9	13.2	13.4
(Yr/Yr % change)	-10.1%	10.2%	18.4%	-0.7%	2.3%	2.1%	1.9%
Fire and Police Stations	2.1	1.6	1.4	1.4	1.5	1.6	1.7
Government Offices	1.8	1.5	1.6	1.7	1.7	1.8	1.8
Government	3.9	3.1	3.0	3.1	3.2	3.4	3.5
(Yr/Yr % change)	8.0%	-19.3%	-4.3%	3.6%	3.3%	5.3%	4.1%
Manufacturing	5.1	5.9	3.0	3.0	3.0	3.0	3.0
Warehouses	11.4	11.0	11.8	12.5	13.1	13.6	14.0
Industrial	16.5	16.9	14.8	15.5	16.1	16.6	17.0
(Yr/Yr % change)	28.4%	2.6%	-12.2%	4.8%	3.8%	3.0%	2.3%
Hospitals / Clinics	10.8	7.0	7.0	7.8	8.4	8.9	9.4
Medical Misc.	1.3	0.5	0.5	0.5	0.5	0.6	0.6
Medical	12.1	7.4	7.5	8.3	9.0	9.5	10.0
(Yr/Yr % change)	213.7%	-38.8%	1.0%	11.5%	7.8%	5.7%	5.0%
Hotels	4.2	1.6	2.2	2.8	3.4	3.1	2.8
Retail Misc.	1.2	1.1	1.0	1.0	1.1	1.1	1.2
Shopping	7.3	5.9	4.8	4.8	5.0	5.2	5.4
Retail	12.7	8.6	8.0	8.6	9.5	9.4	9.4
(Yr/Yr % change)	-13.4%	-32.7%	-6.3%	7.4%	9.8%	-0.4%	-0.6%
NON-RESIDENTIAL BUILDING	68.7	63.2	62.3	64.6	66.5	67.4	68.0
(Yr/Yr % change)	24.5%	-8.1%	-1.4%	3.7%	2.9%	1.3%	1.0%
Multi-Family	79.4	65.5	61.7	63.0	64.6	67.1	69.6
Single-Family	144.9	124.8	118.3	126.6	135.5	145.7	155.2
RESIDENTIAL	224.3	190.3	180.0	189.6	200.1	212.8	224.8
(Yr/Yr % change)	5.6%	-15.1%	-5.4%	5.3%	5.6%	6.3%	5.7%
RESIDENTIAL + NON-RESIDENTIAL BUILDING	293.0	253.5	242.2	254.2	266.6	280.1	292.8
(Yr/Yr % change)	9.5%	-13.5%	-4.4%	4.9%	4.9%	5.1%	4.5%

EXPLANATION: Table 13 conforms to the type-of-structure ordering adopted by many firms and organizations in the industry. Specifically, it breaks non-residential building into ICI work (i.e., industrial, commercial and institutional), since each has its own set of economic and demographic drivers.

Table 14 presents an alternative, perhaps more user-friendly and intuitive, type-of-structure ordering that matches how the data appears in ConstructConnect's on-line product 'Insight'.

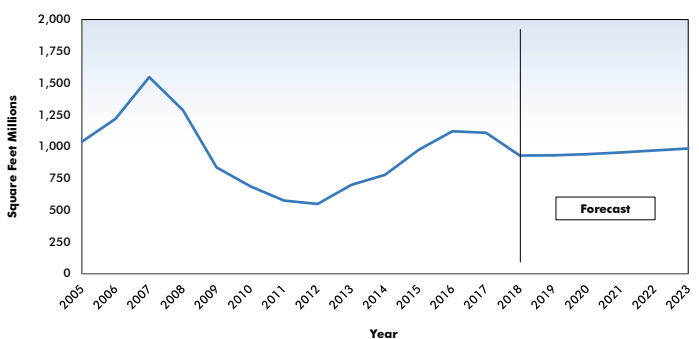
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect / Table: ConstructConnect.

**Graph 37: U.S. Residential Construction Starts — ConstructConnect**



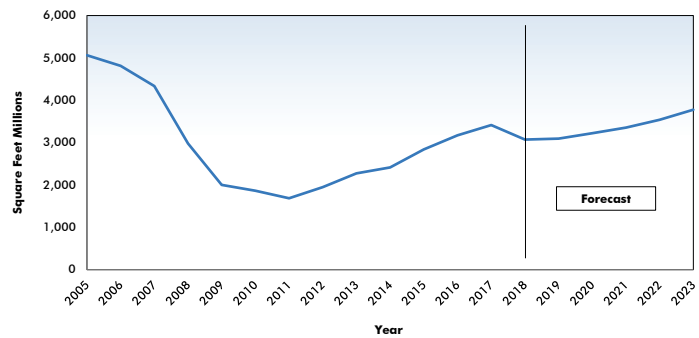
Source of actuals: ConstructConnect “Insight” / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 38: U.S. Non-Residential Building Construction Starts — ConstructConnect**



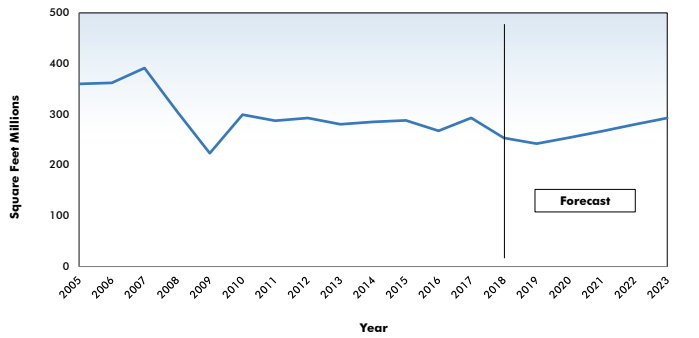
Source of actuals: ConstructConnect “Insight” / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 39: U.S. Residential + Non-Residential Building Construction Starts — ConstructConnect**



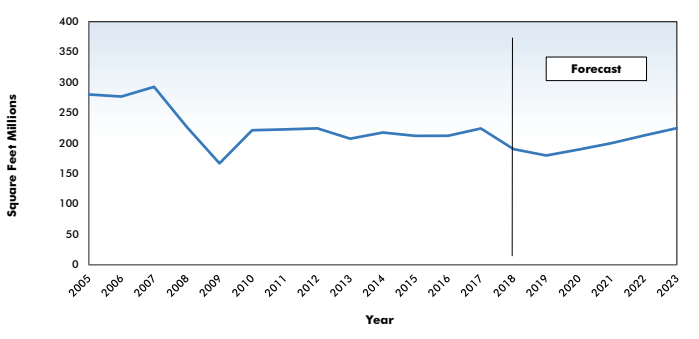
Source of actuals: ConstructConnect “Insight” / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 40: Canada Residential + Non-Residential Building Construction Starts — ConstructConnect**



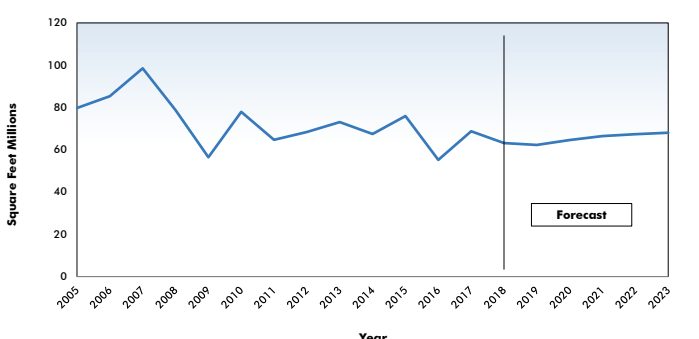
Source of actuals: ConstructConnect “Insight” / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 41: Canada Residential Construction Starts — ConstructConnect**



Source of actuals: ConstructConnect “Insight” / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

**Graph 42: Canada Non-Residential Building Construction Starts — ConstructConnect**



Source of actuals: ConstructConnect “Insight” / Forecasts: Oxford Economics and ConstructConnect.  
Chart: ConstructConnect.

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