Summer 2020 Issue

Construction Starts Forecast

For April 2020 Release

Contents

U.S. oil imports, in barrels, have been on a declining trend for years. Through the first two months of this year, they were -4.0%. Shipments from Saudi Arabia were -27% and from all OPEC nations, -41%. Now there's a recession to worry about.

Highlights

- US construction starts fell 9.1% year-on-year in Q1 2020, largely before the worst of the coronavirus disruption was felt. Residential and non-residential building both decreased from a year earlier, only partially offset by a rise in new engineering projects.
- The economic fallout from the coronavirus will lead to the sharpest contraction in GDP since World War II. High frequency data on retail sales, hotel occupancy and road congestion suggest an especially large hit to Q2 GDP — we expect it to fall by more than 30% annualized before rebounding later in the year. Rapid increases in initial unemployment claims suggest that unemployment will rise to the highest level since the Great Depression. Overall, GDP is expected to shrink 4.1% in 2020.
- US construction is expected to see a historically large annual decline in 2020, larger than that seen during the global financial crisis. Non-residential building, most dependent on private investment spending, is expected to fare the worst this year. However, unlike the 2008-09 crisis, where a large debt overhang and tough financing conditions weighed on construction for several years, construction activity is well placed to rebound once stay-at-home orders are lifted and economic conditions improve.
- Canadian construction starts declined 33.4% year-on-year in Q1 2020, with similar declines in all three headline sectors of residential, non-residential and civil engineering construction. Only a handful of sectors posted annual growth, including office building and bridge construction, both of which were boosted by groundbreaking of megaprojects.
- Canadian construction starts are expected to fall 38.5% in 2020, with annual declines of more than 30% in all three sub-sectors. A slightly smaller decline in the non-residential building sector is likely the result of weakness in 2019. Residential construction, largely judged to be 'non-essential' activity, is expected to shrink 41.1% in 2020. Engineering construction is expected to fall 41.2%, a steeper decline than in the US in part related to a larger dependence on oil-related construction.

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Sources: ConstructConnect®/Oxford Economics. Forecast reflects actual starts through Q1 2020.

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Overview

Construction begins 2020 on a weak footing

Total US construction starts began 2020 on a weak footing, shrinking 9.1% year-on-year in Q1. Both residential and non-residential building decreased from a year earlier, by 2.3% and 24.0% respectively, only partially offset by a 10.3% year-on-year rise in the construction of new engineering projects. Construction started on only one mega-project, defined as a project valued at over $1 billion, an airport people mover at LAX classified in the miscellaneous civil category, driving 68% year-on-year growth in that category. Elsewhere in civil engineering, construction of dams, canals & marine structures grew 108% year-on-year, although this was the result of a low level of activity in the same period last year, rather than due to any particularly large project. Construction of bridges, water, sewage & treatment works, and power infrastructure were also all up from their level in early-2019, but road construction retreated slightly and new building at airports fell 42% year-on-year.

In the non-residential segment, there were widespread annual declines of more than 30% in several segments, including industrial, transportation terminals, nursing homes, hotels, retail, and sports & conference centers. Two $600 million Google data centers, one in Virginia and one in Nebraska, limited the size of the of the decline in private office building, although this also fell 4.5% from a year earlier. There were, however, some strong rises (of over 50% year-on-year) in a few smaller segments, including laboratories, libraries & museums, and courthouses.

The decline in new homebuilding resulted from a 30.4% year-on-year fall in the multi-family segment. Construction of new single-family homes grew 11.9% year-on-year. However, this resulted from strong growth in January and especially in February (where it rose 33% on the month); new homebuilding growth slowed markedly in March.

Although Q1 construction has been relatively weak, the most significant impact from the coronavirus pandemic has yet to be seen in the most recent construction data. Widespread lockdowns were not largely in place until mid-to-late March, so only data towards the tail end of the quarter reflect the lockdowns.

Table 1: Summary forecasts
(Annual percentage changes unless specified otherwise)

	2018	2019	2020	2021	2022	2023	2024
US							
Macro variables							
GDP	2.9	2.3	-4.1	7.7	1.6	1.6	1.7
Population growth	0.5	0.5	0.3	0.3	0.5	0.5	0.5
Unemployment rate (%)	3.9	3.7	9.8	5.8	4.4	4.2	4.2
Real disposable income	4.0	2.9	-1.8	3.4	2.9	1.8	1.7
Central bank rate (%)	1.8	2.2	0.4	0.2	0.6	1.2	1.6
10-year government yield (%)	2.9	2.1	1.0	1.4	1.8	2.1	2.3
Construction starts (y/y % change of $ volumes)							
Total starts	-2.4	6.5	-27.4	20.8	8.7	6.1	5.2
Residential	-6.7	-0.8	-28.6	25.0	9.9	6.2	5.9
Non-res bldg	-3.3	8.9	-31.9	18.6	8.6	6.7	5.2
Civil engineering	8.8	15.6	-17.5	18.1	7.2	5.3	4.0
Canada							
Macro variables							
GDP	2.0	1.6	-6.5	9.2	2.0	1.6	1.6
Population growth	1.4	1.4	0.9	1.1	1.1	1.1	1.0
Unemployment rate (%)	5.8	5.7	11.4	7.8	6.3	6.1	6.1
Real disposable income	1.8	2.5	1.3	0.6	4.0	2.0	1.9
Central bank rate (%)	1.4	1.8	0.6	0.3	0.5	0.8	1.0
10-year government yield (%)	2.3	1.6	0.8	0.9	1.3	1.6	2.0
Exchange rate C$ per US$	1.30	1.33	1.46	1.49	1.45	1.41	1.37
Construction starts (y/y % change of $ volumes)							
Total starts	31.8	-16.9	-38.5	40.4	16.5	10.1	6.5
Residential	-6.1	-0.3	-41.1	35.7	9.3	7.3	5.4
Non-res bldg	97.0	-42.3	-31.8	28.6	18.7	9.6	4.7
Civil engineering	20.7	2.0	-41.2	54.3	20.3	12.2	8.5

Employment in the construction sector was solid in the first two months of the year, with 38,000 and 41,000 new jobs added in January and February respectively. However, the sector shed 29,000 jobs in March, based on data through the 12th. The sector is likely to see widespread job cuts in the coming months, as stay-at-home orders restrict building in some states, and demand for new construction projects dries up.

Coronavirus pandemic cuts macroeconomic outlook

US real GDP grew an annualized rate of 2.1% in Q4 2019. However, this performance was somewhat of an illusion. Roughly 70% of the advance came from a massive slump in imports. Growth over the last three quarters represents the economy's worst performance since the sluggishness in 2016. Since then, the coronavirus outbreak has brought back high levels of uncertainty and disruption, constraining both business and consumer outlays.

The economic fallout from the coronavirus will not only mark the end of the longest US economic expansion on record, but it will also lead to the sharpest contraction in activity since World War II. We now expect real GDP will contract around 4.1% in 2020, assuming a 12-week lockdown starting in late March, followed by a very gradual relaxation of social distancing measures thereafter.

High frequency indicators show that spending on restaurants has come to a near

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full stop, hotel occupation is only about 20%, retail spending at brick and mortar stores is down over 80%, and road congestion across the nation is about 75% lower than last year. We estimate real GDP will shrink more than 30% annualized in Q2 — nearly 2.5 times larger than the output loss at the trough of the global financial crisis.

A decade-long streak of monthly employment gains ended abruptly in March as the initial effects of the coronavirus pandemic led to a sharp job loss of 701,000. But, while the report may have looked dark, it will pale in comparison to the expected 24 million job losses in April. We foresee the unemployment rate surging to 14% in April and 16% in May.

Unprecedented Fed stimulus and unparalleled fiscal support will provide an essential lifeline to the economy. But, even with $2.5tn of stimulus — including a multi-trillion business lending capacity — the 'new normal' of fear will feature only a gradual relaxation of social distancing measures and a slow recovery until a medical solution to coronavirus ends the crisis.

Given the severity of the economic and labor market shock and the expectation for a gradual and uneven easing of lockdown measures in Q3, we forecast a U-shaped rebound with the structurally vulnerable states taking the longest to recover.

Steep plunge in construction in 2020

US construction, like much of the rest of the economy, is facing headwinds unknown in recent history. The forecast for total US construction starts this year is -27.4%. For reference, the annual decline in 2009, the trough of the financial crisis, was -18.1%. Stay-at-home orders have been issued across the country resulting in a huge collapse in demand.

Perhaps the one point of light to note is that the rebound in activity is forecast to be faster than what we experienced after the 2008-09 crisis. In that downturn, debt overhang, accelerated foreclosures and a long deleveraging process sapped the forces of a robust post-crisis recovery. The current economic situation facing the construction sector does not have those elements to the same extent. The current shock is as close to the textbook definition of 'exogenous' as can be imagined: it's entirely from outside the economy and not caused by underlying structural faults within the system. This gives reason to think that recovery, once in place, will follow more of the 'V' shape, as opposed to the 'U', or even 'L' shape recovery following the last construction crash in 2008-09.

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

US construction also has the partial benefit of being viewed, in some cases, as an essential service. This is particularly the case in the civil engineering category where the completion of infrastructure projects can be vital to ensure connectivity and basic economic security. However, more discretionary construction projects such as homebuilding and some commercial construction activities find it harder to make this case. A full lockdown of all construction has only been ordered in Pennsylvania (except for hospital related construction), with 15 other states implementing partial lockdowns of construction work. The remaining 35 states have designated construction as an essential service and thus have not enforced shutdowns of the sector. That said, there are likely to be many non-essential projects that are voluntarily closed by firms that wish to protect their workforce or mitigate potential liability.

The residential sector is forecast to decline by 28.6% in 2020. With residential construction being seen as largely non-essential, many homebuilding projects have been suspended. There had been early positive signs in the residential sector at the beginning of 2020, marking a break from declining activity in 2018 and 2019. This underlines the reasonably strong fundamentals in the residential sector pre-COVID-19: rising affordability, growing demand among millennial-generation first-time buyers and an easing of construction labor constraints. These points of strength remain in place and over the medium term, will drive construction activity in the US. Indeed, we forecast a sharp rebound of 25% in 2021, followed by 10% growth in 2022.

The non-residential building sector is set to witness the sharpest fall in activity this year. Investment for new commercial ventures has all but disappeared amid the outbreak of COVID-19. Amongst the worst hit parts of non-residential construction is the hotels and motels subsector. The near complete shutdown of the tourist industry with airline travel (both international and domestic) either curtailed or operating at skeleton levels, the demand for new hotel developments is highly limited. Other areas such as retail establishments, office space and entertainment venues are all seeing demand drop as stay-in-place orders are issued across most states.

The one positive area of non-residential building this year is in medical construction. The surge in demand for new capacity as the health system readies itself for a sharp intake of patients is the major construction growth area at present. A more positive outlook is also expected in the construction of government administration building. Though we still expect construction to decline in this area, it will be at a far slower

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rate than the rest of non-residential. The importance of government administration at both the federal and state level during the COVID-19 crisis will create a moderate level of construction demand in this area.

The manufacturing sector will witness very sharp declines in new building this year as demand for manufactured goods evaporates. Further out, however, the case for US manufacturing remains more robust. The trend towards re-shoring of industrial capacity to the US homeland will only see greater vigour in the coming years. Long supply-chains crossing multiple countries have emphasized the fragility of the US to surge produce critical goods during a time of international crisis. Political will to bolster critical American industries has undoubtedly increased as a consequence of this crisis and we expect this will be reflected in renewed construction demand from the manufacturing sector.

Civil engineering is less dependent on private investment than the non-residential sector, with many of its contracts being tied directly to long-term government spending plans. As such, the civil engineering sector is less impacted by the sharp decline in private investment. Furthermore, civil engineering projects are more likely to be classified as essential services. For instance, power infrastructure and water, sewage & treatment facilities must remain functional.

Across-the-board declines in Canadian construction

Total construction starts in Canada shrank 33.3% year-on-year in Q1 2020, with sharp declines in all three headline segments of residential building, non-residential building, and civil engineering construction. In the residential segment, an annual decline of more than 50% in new apartment building dragged down new residential construction by 29.3% year-on-year, only partially offset by a strong rise of 20.7% in single-family home building. Non-residential building declined 37.3% from Q1 2019, with steep declines posted in all sectors except hotels & motels, private offices, and industrial.

While a rise of over 700% in the hotels & motels segment appears strong, sector construction was at a historic low in Q1 2019 — the reading in Q1 2020 was weak in a historic context and the outlook for the sector remains muted with hotel occupancy rates currently around 13%. By contrast, the 50% annual rise in private office building was boosted by groundbreaking on a C$1 billion office block in Toronto. Construction in the engineering sector declined 33.4% year-on-year. All sub-sectors posted steep annual declines, except for new bridge construction, underpinned by a $1.4 billion project in Surrey, BC. Like in the US, the steepest toll from the coronavirus pandemic on Canadian construction has not yet been felt. The peak impact from lockdowns and anemic economic activity is likely to feed through in Q2.

The Canadian economy was already teetering on recession prior to the coronavirus pandemic. GDP growth came to a virtual standstill in Q4 2019, edging up only 0.3% annualized. The spread of the virus in Canada has led to containment shutdowns that will result in a nearly 40% annualized decline in Q2 GDP. Early data from March suggest that it could be even worse. Consumer confidence collapsed 32 points in March, the largest monthly decline on record, and new claims for Employment Insurance skyrocketed to an unprecedented high. This points to huge job losses and a massive rise in unemployment that will cause a severe retrenchment in household spending.

We expect a strong bounce back in Q4, once lockdowns are lifted, boosted by extraordinary fiscal and monetary stimulus. The federal government's "first phase" fiscal response, upsized to C$107bn (4.6% of GDP) is a start but much more is required. The Bank of Canada stands ready "to do what it takes". And, as widely expected, the BoC finally cut the policy rate to the 'zero' lower bound on March 27th. It also launched new programs to inject liquidity and begin acquiring Government of Canada securities. We expect Canadian GDP to contract by 6.5% in 2020.

Headline construction starts are forecast to decline by 38.5% in 2020. Both the residential and civil engineering sectors will fall by 41%, while the non-residential building sector is forecast to decline by 31.8%. Similar to the US, we expect a strong pickup in activity next year, with growth forecast at 40% in 2021 and then double-digit growth in 2022 and 2023. We expect total starts to exceed their 2019 level by 2022.

The non-residential building sector will see a slightly smaller decline relative to the rest of construction this year. This is in part due to base effects from 2019, as this category of construction fell sharply last year. Non-residential building starts were at a low level in 2019 and, as such, will not see sharp additional declines during the COVID-19 downturn. Hospital, clinics and other medical facilities will see declines in starts this year, largely as a Q1 story. Construction over the rest of the year will be healthier as new demand for medical services soars. Transportation terminal starts are forecast to decline by over 50% as travel demand largely dries up under lockdown orders. Likewise, amusement starts and office starts are forecast drop by 50.3% and 36.3% respectively as people cease leisure activities and increasingly work from home.

The residential sector is forecast to decline by 41.1% this year. The residential sector includes mostly non-essential activity and as such we can expect a broad suspension in the near-term. The multi-family segment is forecast to decline more precipitously than single-family, where underlying demand is more positive. Beyond the current crisis, residential growth will be underscored by single-family housing construction, as healthy population growth (once immigration is restored) and demand from the millennial generation looking to make home purchases bolsters Canadian homebuilding.

The civil engineering sector in Canada is forecast to decline by 41.2% in 2020. This is a steeper decline than in US civil engineering starts and reflects the fact that Canada's civil engineering sector is so dependent on extraction activities, particularly oil and gas (roughly half of all civil engineering starts in 2019 were in the All Other Civil category, which includes extraction projects, among other things). The oil and gas sector in Canada is suffering from a sharp drop in the price of oil brought about by the impact of the COVID-19 epidemic on demand and a global supply glut. Alberta Premier Jason Kenney has raised the prospect of mandatory production cuts to support the price and ensure the sector's long-run survival. It should be noted, however, that Canada's oil extraction sector has made efficiency gains since the last big drop in oil prices in late 2014, which should help it weather the current crisis.

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

($ Billions USD)

	Actuals		Forecasts				
	2018	2019	2020	2021	2022	2023	2024
Single-family	202.426	198.825	154.528	185.478	202.311	215.599	228.113
Multi-family	94.207	95.313	55.460	77.020	86.282	90.757	96.421
TOTAL RESIDENTIAL	296.633	294.138	209.988	262.498	288.593	306.356	324.534
(Yr/yr % change)	*-6.7%*	*-0.8%*	*-28.6%*	*25.0%*	*9.9%*	*6.2%*	*5.9%*
Hotels/Motels	26.252	22.409	10.460	12.607	14.008	15.057	15.830
Shopping/Retail	18.307	16.289	12.585	14.110	15.254	16.471	17.628
Parking Garages	2.867	3.114	2.206	2.630	2.983	3.147	3.242
Amusement	8.552	7.456	5.766	6.726	7.674	8.023	8.370
Private Offices	29.887	35.708	23.026	28.142	29.570	31.144	32.896
Govenmental Offices	11.016	11.454	10.940	11.847	12.245	12.868	13.213
Laboratories (Schools & Industrial)	2.908	2.108	3.254	3.092	3.199	3.309	3.421
Warehouses	21.746	21.420	18.086	19.308	21.011	22.643	23.763
Sports Stadium/Convention Center	7.028	9.458	6.087	7.173	8.273	9.044	9.753
Transportation Terminals	5.254	10.626	6.097	7.142	8.278	9.330	10.042
TOTAL COMMERCIAL	133.816	140.044	98.508	112.779	122.497	131.037	138.158
(Yr/yr % change)	*-6.7%*	*4.7%*	*-29.7%*	*14.5%*	*8.6%*	*7.0%*	*5.4%*
TOTAL INDUSTRIAL (manufacturing)	35.799	53.150	10.150	20.819	26.788	32.254	36.167
(Yr/yr % change)	*-2.6%*	*48.5%*	*-80.9%*	*105.1%*	*28.7%*	*20.4%*	*12.1%*
Religious	2.191	1.801	1.316	1.727	1.775	1.794	1.819
Hospitals/Clinics	16.888	19.706	22.287	21.557	22.114	22.632	23.642
Nursing Homes/Assisted Living	10.614	9.623	8.201	10.588	11.513	12.316	13.045
Libraries/Museums	2.748	3.804	3.515	4.047	4.264	4.385	4.454
Courthouse	1.928	1.570	1.490	2.064	2.179	2.253	2.342
Police/Fire	3.038	3.200	2.712	3.458	3.608	3.741	3.865
Prisons	3.147	2.192	1.489	1.887	1.997	2.105	2.190
Military	5.231	5.279	5.435	5.425	5.876	6.122	6.341
Educational Facilities	71.499	75.396	56.234	67.336	70.702	73.205	75.335
MED misc	11.249	9.189	9.468	10.425	11.257	11.739	12.130
TOTAL INSTITUTIONAL	128.531	131.760	112.147	128.514	135.285	140.292	145.163
(Yr/yr % change)	*0.5%*	*2.5%*	*-14.9%*	*14.6%*	*5.3%*	*3.7%*	*3.5%*
Miscellaneous Non-Res Building	7.207	7.482	5.621	6.525	7.162	7.565	7.807
TOTAL NON-RES BLDG	305.353	332.435	226.426	268.637	291.733	311.148	327.296
(Yr/yr % change)	*-3.3%*	*8.9%*	*-31.9%*	*18.6%*	*8.6%*	*6.7%*	*5.2%*
Airport	7.269	7.288	5.701	5.987	6.949	7.683	8.343
Roads	63.257	65.244	51.916	66.247	69.994	73.881	76.890
Bridges	24.029	30.005	23.529	28.602	29.952	31.126	32.213
Dams/Canal/Marine	6.645	8.536	6.667	7.842	8.343	8.629	8.890
Water & Sewage Treatment	29.644	31.278	27.062	31.510	33.041	34.538	35.867
Misc Civil (Power, etc.)	32.139	46.068	40.589	43.427	48.499	51.368	53.382
TOTAL ENGINEERING	162.984	188.419	155.464	183.617	196.778	207.224	215.584
(Yr/yr % change)	*8.8%*	*15.6%*	*-17.5%*	*18.1%*	*7.2%*	*5.3%*	*4.0%*
TOTAL NON-RESIDENTIAL	468.337	520.854	381.890	452.253	488.510	518.372	542.880
(Yr/yr % change)	*0.6%*	*11.2%*	*-26.7%*	*18.4%*	*8.0%*	*6.1%*	*4.7%*
GRAND TOTAL	764.970	814.992	591.878	714.751	777.103	824.728	867.414
(Yr/yr % change)	*-2.4%*	*6.5%*	*-27.4%*	*20.8%*	*8.7%*	*6.1%*	*5.2%*

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				
	2018	2019	2020	2021	2022	2023	2024
Summary							
CIVIL	162.984	188.419	155.464	183.617	196.778	207.224	215.584
NON-RESIDENTIAL BUILDING	305.353	332.435	226.426	268.637	291.733	311.148	327.296
RESIDENTIAL	296.633	294.138	209.988	262.498	288.593	306.356	324.534
GRAND TOTAL	764.970	814.992	591.878	714.751	777.103	824.728	867.414
Verticals							
Airport	7.269	7.288	5.701	5.987	6.949	7.683	8.343
All Other Civil	24.429	31.385	27.003	28.714	30.335	31.574	32.669
Bridges	24.029	30.005	23.529	28.602	29.952	31.126	32.213
Dams / Canals / Marine Work	6.645	8.536	6.667	7.842	8.343	8.629	8.890
Power Infrastructure	7.710	14.684	13.586	14.713	18.164	19.794	20.713
Roads	63.257	65.244	51.916	66.247	69.994	73.881	76.890
Water and Sewage Treatment	29.644	31.278	27.062	31.510	33.041	34.538	35.867
CIVIL	162.984	188.419	155.464	183.617	196.778	207.224	215.584
(Yr/yr % change)	*8.8%*	*15.6%*	*-17.5%*	*18.1%*	*7.2%*	*5.3%*	*4.0%*
Offices (private)	29.887	35.708	23.026	28.142	29.570	31.144	32.896
Parking Garages	2.867	3.114	2.206	2.630	2.983	3.147	3.242
Transportation Terminals	5.254	10.626	6.097	7.142	8.278	9.330	10.042
Commercial	38.008	49.449	31.330	37.914	40.832	43.621	46.180
(Yr/yr % change)	*4.6%*	*30.1%*	*-36.6%*	*21.0%*	*7.7%*	*6.8%*	*5.9%*
Amusement	8.552	7.456	5.766	6.726	7.674	8.023	8.370
Libraries / Museums	2.748	3.804	3.515	4.047	4.264	4.385	4.454
Religious	2.191	1.801	1.316	1.727	1.775	1.794	1.819
Sports Arenas / Convention Centers	7.028	9.458	6.087	7.173	8.273	9.044	9.753
Community	20.519	22.519	16.684	19.673	21.987	23.245	24.395
(Yr/yr % change)	*-29.7%*	*9.8%*	*-25.9%*	*17.9%*	*11.8%*	*5.7%*	*4.9%*
College / University	20.006	19.693	15.095	17.807	18.693	19.561	20.236
Elementary / Pre School	19.349	21.237	14.813	18.764	19.790	20.586	21.357
Jr / Sr High School	30.419	32.472	24.984	29.089	30.426	31.198	31.815
Special / Vocational	1.726	1.994	1.342	1.676	1.793	1.860	1.927
Educational	71.499	75.396	56.234	67.336	70.702	73.205	75.335
(Yr/yr % change)	*2.9%*	*5.4%*	*-25.4%*	*19.7%*	*5.0%*	*3.5%*	*2.9%*
Courthouses	1.928	1.570	1.490	2.064	2.179	2.253	2.342
Fire and Police Stations	3.038	3.200	2.712	3.458	3.608	3.741	3.865
Government Offices	11.016	11.454	10.940	11.847	12.245	12.868	13.213
Prisons	3.147	2.192	1.489	1.887	1.997	2.105	2.190
Government	19.128	18.414	16.631	19.256	20.029	20.967	21.610
(Yr/yr % change)	*0.6%*	*-3.7%*	*-9.7%*	*15.8%*	*4.0%*	*4.7%*	*3.1%*
Industrial Labs / Labs / School Labs	2.908	2.108	3.254	3.092	3.199	3.309	3.421
Manufacturing	35.799	53.150	10.150	20.819	26.788	32.254	36.167
Warehouses	21.746	21.420	18.086	19.308	21.011	22.643	23.763
Industrial	60.453	76.678	31.490	43.219	50.998	58.206	63.351
(Yr/yr % change)	*-1.4%*	*26.8%*	*-58.9%*	*37.2%*	*18.0%*	*14.1%*	*8.8%*
Hospitals / Clinics	16.888	19.706	22.287	21.557	22.114	22.632	23.642
Medical Misc.	11.249	9.189	9.468	10.425	11.257	11.739	12.130
Nursing Homes	10.614	9.623	8.201	10.588	11.513	12.316	13.045
Medical	38.750	38.519	39.957	42.570	44.884	46.687	48.817
(Yr/yr % change)	*-1.8%*	*-0.6%*	*3.7%*	*6.5%*	*5.4%*	*4.0%*	*4.6%*
Military	5.231	5.279	5.435	5.425	5.876	6.122	6.341
(Yr/yr % change)	*9.5%*	*0.9%*	*3.0%*	*-0.2%*	*8.3%*	*4.2%*	*3.6%*
Hotels	26.252	22.409	10.460	12.607	14.008	15.057	15.830
Retail Misc.	7.207	7.482	5.621	6.525	7.162	7.565	7.807
Shopping	18.307	16.289	12.585	14.110	15.254	16.471	17.628
Retail	51.766	46.181	28.666	33.243	36.424	39.094	41.265
(Yr/yr % change)	*-8.1%*	*-10.8%*	*-37.9%*	*16.0%*	*9.6%*	*7.3%*	*5.6%*
NON-RESIDENTIAL BUILDING	305.353	332.435	226.426	268.637	291.733	311.148	327.296
(Yr/yr % change)	*-3.3%*	*8.9%*	*-31.9%*	*18.6%*	*8.6%*	*6.7%*	*5.2%*
Multi-Family	94.207	95.313	55.460	77.020	86.282	90.757	96.421
Single-Family	202.426	198.825	154.528	185.478	202.311	215.599	228.113
RESIDENTIAL	296.633	294.138	209.988	262.498	288.593	306.356	324.534
(Yr/yr % change)	*-6.7%*	*-0.8%*	*-28.6%*	*25.0%*	*9.9%*	*6.2%*	*5.9%*
GRAND TOTAL	764.970	814.992	591.878	714.751	777.103	824.728	867.414
(Yr/yr % change)	*-2.4%*	*6.5%*	*-27.4%*	*20.8%*	*8.7%*	*6.1%*	*5.2%*

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

States (alphabetical by 2-letter code)	Actuals (Level in $ Millions USD) 2019	Forecasts (Year versus previous year % change) 2020	2021	2022	2023	2024
Alaska - AK	$1,594	-15.0%	21.2%	8.9%	4.7%	4.7%
Alabama - AL	$12,674	-28.1%	23.8%	6.8%	5.6%	5.0%
Arkansas - AR	$6,407	-10.6%	-4.4%	8.2%	5.8%	5.2%
Arizona - AZ	$20,389	-29.2%	1.8%	9.3%	5.4%	4.6%
California - CA*	$65,032	-12.2%	10.5%	10.1%	5.8%	5.6%
Colorado - CO	$19,918	-25.5%	19.7%	9.3%	6.1%	5.8%
Connecticut - CT	$6,871	-21.7%	23.6%	7.8%	4.2%	4.0%
District Of Columbia - DC	$4,011	-26.0%	8.6%	7.0%	3.9%	5.0%
Delaware - DE	$2,637	-23.2%	5.6%	6.8%	4.8%	4.4%
Florida - FL*	$61,378	-25.0%	18.9%	9.1%	5.4%	5.3%
Georgia - GA	$30,520	-36.8%	23.0%	10.3%	6.6%	5.8%
Hawaii - HI	$3,018	-38.9%	69.5%	8.5%	4.3%	4.8%
Iowa - IA	$7,789	-35.0%	12.8%	7.1%	5.6%	5.2%
Idaho - ID	$5,375	-34.5%	16.4%	8.6%	5.1%	5.1%
Illinois - IL	$21,686	-33.4%	31.1%	7.0%	4.1%	4.3%
Indiana - IN	$13,550	-19.5%	16.9%	9.7%	6.7%	5.5%
Kansas - KS	$6,229	-20.9%	27.9%	9.2%	5.3%	5.0%
Kentucky - KY	$9,294	-38.3%	30.1%	8.8%	5.4%	4.8%
Louisiana - LA	$12,021	-22.1%	17.9%	9.3%	6.0%	5.3%
Massachusetts - MA	$17,189	-39.3%	38.6%	8.0%	4.2%	4.6%
Maryland - MD	$10,905	-24.4%	1.8%	7.7%	4.5%	4.3%
Maine - ME	$2,533	-16.1%	10.4%	6.7%	5.1%	4.8%
Michigan - MI	$17,624	-27.8%	31.0%	8.9%	5.6%	4.8%
Minnesota - MN	$18,014	-36.2%	27.3%	9.1%	5.8%	5.2%
Missouri - MO	$11,888	-18.3%	-2.4%	7.3%	4.4%	4.3%
Mississippi - MS	$4,743	-18.4%	-0.1%	6.9%	5.6%	4.9%
Montana - MT	$2,514	-34.9%	18.2%	8.5%	5.3%	5.0%
North Carolina - NC	$32,903	-31.0%	20.5%	9.1%	5.4%	5.2%
North Dakota - ND	$3,061	-49.3%	52.4%	8.0%	5.7%	5.5%
Nebraska - NE	$4,866	-5.5%	-1.3%	7.7%	5.5%	5.3%
New Hampshire - NH	$2,636	-30.8%	32.6%	8.4%	4.7%	4.8%
New Jersey - NJ	$13,223	-23.0%	20.2%	8.0%	4.2%	4.2%
New Mexico - NM	$3,718	-36.4%	26.0%	6.3%	5.1%	4.7%
Nevada - NV	$10,043	-33.4%	33.6%	9.9%	5.2%	5.1%
New York - NY*	$37,427	-36.6%	56.8%	5.3%	17.2%	4.9%
Ohio - OH	$19,891	-26.9%	19.9%	8.7%	5.7%	5.0%
Oklahoma - OK	$8,677	-18.7%	19.4%	8.1%	5.5%	5.1%
Oregon - OR	$10,063	-33.4%	30.7%	9.7%	6.2%	6.0%
Pennsylvania - PA	$20,996	-21.2%	24.8%	8.0%	4.8%	4.5%
Rhode Island - RI	$1,116	0.0%	17.7%	8.3%	4.7%	5.0%
South Carolina - SC	$14,574	-26.9%	17.6%	7.6%	5.4%	5.0%
South Dakota - SD	$3,477	-49.9%	32.6%	7.8%	5.3%	5.2%
Tennessee - TN	$18,502	-16.1%	5.9%	8.0%	5.2%	4.9%
Texas - TX*	$129,125	-28.8%	24.3%	9.7%	6.5%	5.7%
Utah - UT	$10,264	-11.2%	26.5%	10.2%	5.2%	5.4%
Virginia - VA	$22,948	-25.0%	13.9%	7.1%	4.2%	4.5%
Vermont - VT	$769	-32.7%	36.4%	7.6%	5.3%	5.5%
Washington - WA	$28,174	-39.6%	18.3%	9.1%	5.2%	5.3%
Wisconsin - WI	$14,749	-33.6%	17.6%	8.7%	5.4%	4.9%
West Virginia - WV	$2,312	-4.8%	19.8%	7.6%	4.8%	4.2%
Wyoming - WY	$5,675	-61.0%	27.2%	8.7%	4.7%	4.9%
United States	$814,992	-27.4%	20.8%	8.7%	6.1%	5.2%

*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.

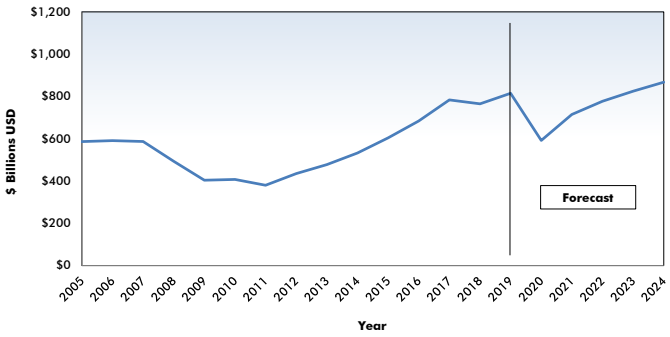
Table 6: U.S. Four Largest States: Type-of-Structure Forecasts ($ Billions USD)								
		Actuals		Forecasts				
		2018	2019	2020	2021	2022	2023	2024
New York	Residential	9.855	10.282	4.892	9.190	9.888	11.480	12.154
	Non-res Building	17.575	19.365	10.462	14.598	15.166	17.744	18.673
	Engineering/Civil	10.720	7.780	8.384	13.423	14.140	16.711	17.364
	Total	38.151	37.427	23.739	37.211	39.193	45.935	48.190
(Yr vs previous yr % Change)		*-23.9%*	*-1.9%*	*-36.6%*	*56.8%*	*5.3%*	*17.2%*	*4.9%*
Florida	Residential	26.700	28.682	21.209	26.031	28.704	30.342	32.218
	Non-res Building	18.729	18.606	15.846	17.572	18.957	19.889	20.842
	Engineering/Civil	10.126	14.089	8.961	11.087	12.009	12.650	13.156
	Total	55.555	61.378	46.016	54.691	59.670	62.881	66.216
(Yr vs previous yr % Change)		*-5.0%*	*10.5%*	*-25.0%*	*18.9%*	*9.1%*	*5.4%*	*5.3%*
Texas	Residential	41.983	44.006	38.628	50.034	55.244	59.121	63.182
	Non-res Building	34.028	61.190	30.261	38.987	43.343	46.846	49.286
	Engineering/Civil	20.142	23.929	23.042	25.254	26.816	27.554	28.681
	Total	96.153	129.125	91.932	114.275	125.403	133.521	141.150
(Yr vs previous yr % Change)		*-5.7%*	*34.3%*	*-28.8%*	*24.3%*	*9.7%*	*6.5%*	*5.7%*
California	Residential	27.328	24.055	16.841	19.151	21.599	23.094	24.753
	Non-res Building	26.682	25.536	24.199	27.321	29.693	31.092	32.684
	Engineering/Civil	17.007	15.442	16.080	16.649	18.191	19.338	20.197
	Total	71.016	65.032	57.120	63.122	69.483	73.524	77.634
(Yr vs previous yr % Change)		*-9.5%*	*-8.4%*	*-12.2%*	*10.5%*	*10.1%*	*5.8%*	*5.6%*

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

Tweeted by ConstructConnect:

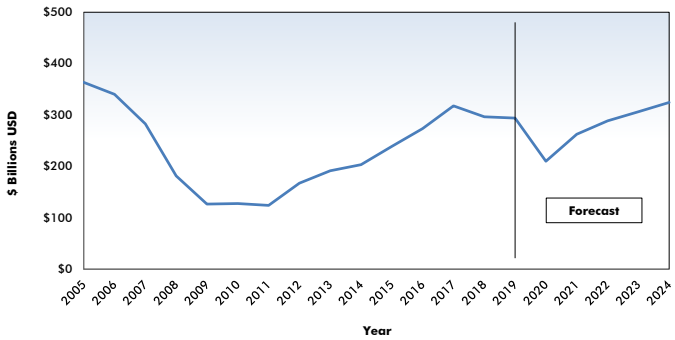
@ConstructConnx

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



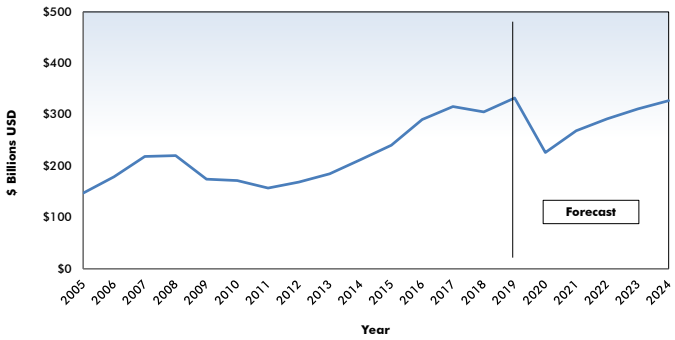
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

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



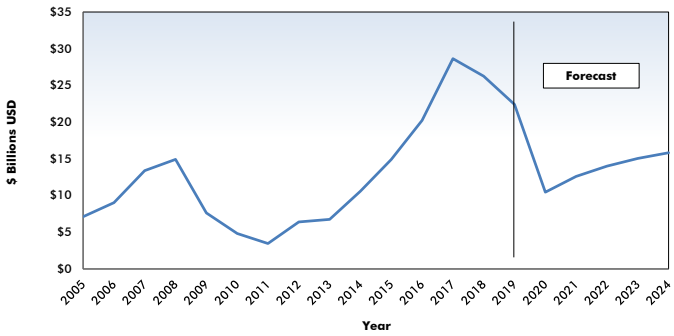
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

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



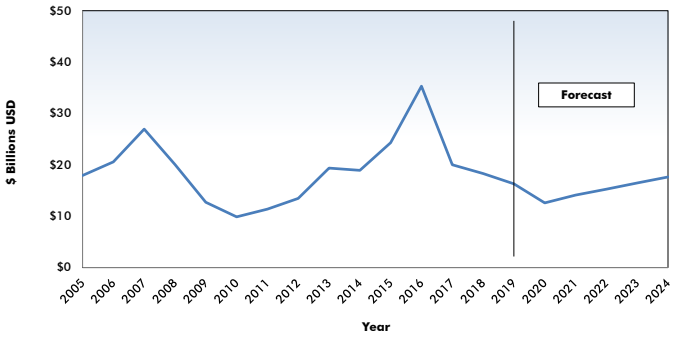
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

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



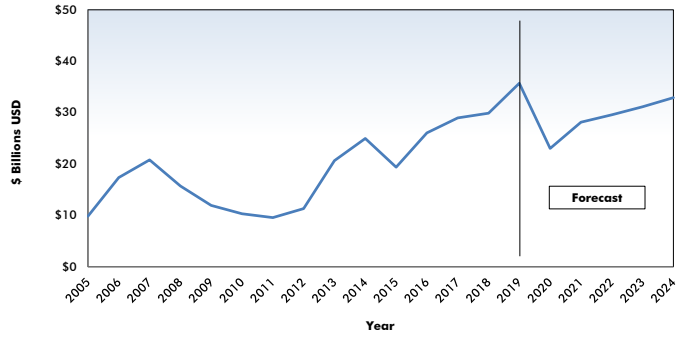
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

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



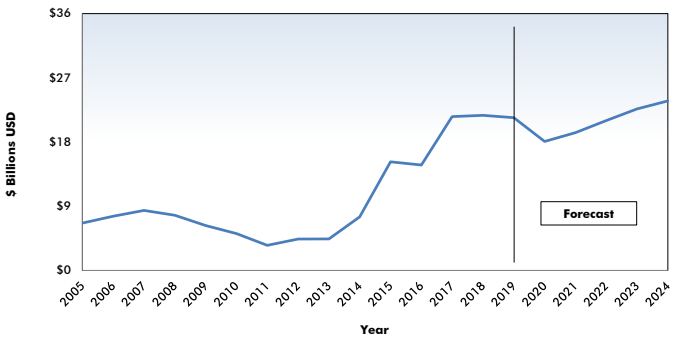
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

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



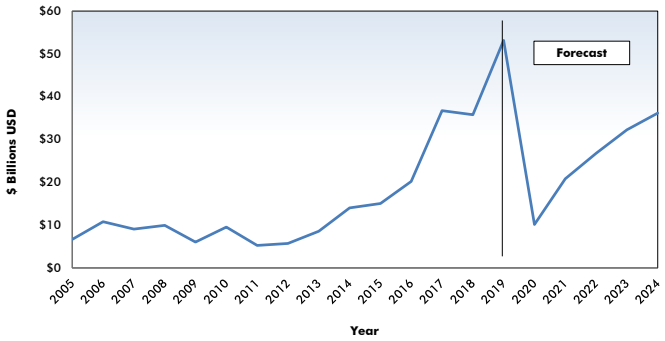
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

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



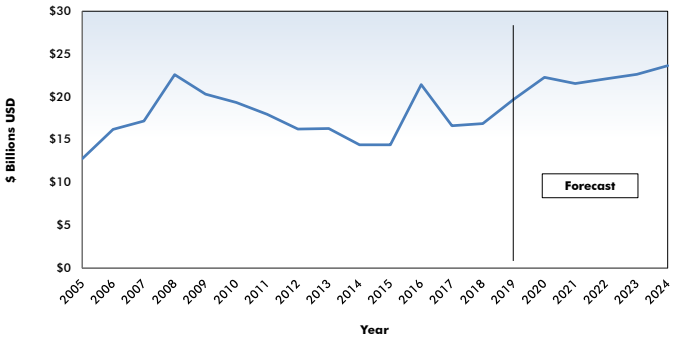
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

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



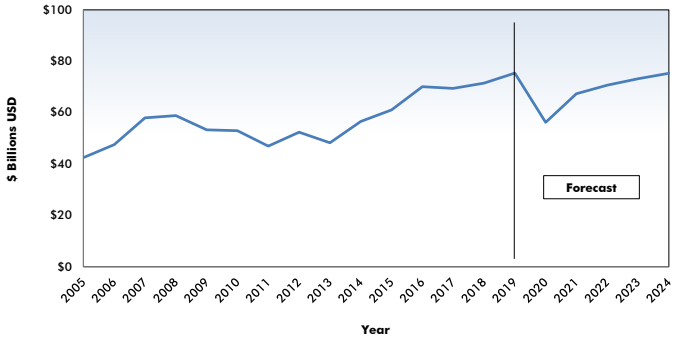
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

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



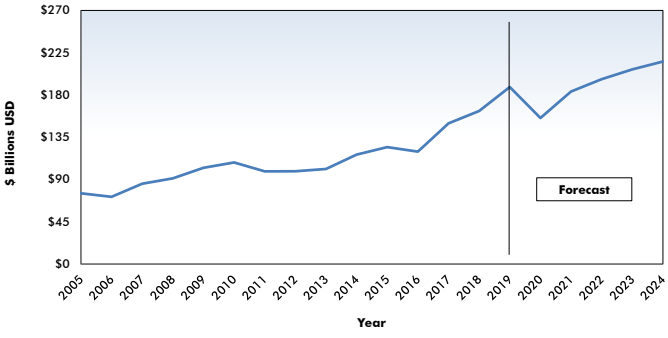
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

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



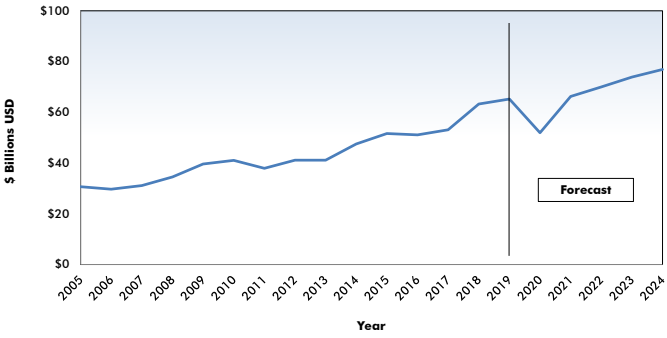
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

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



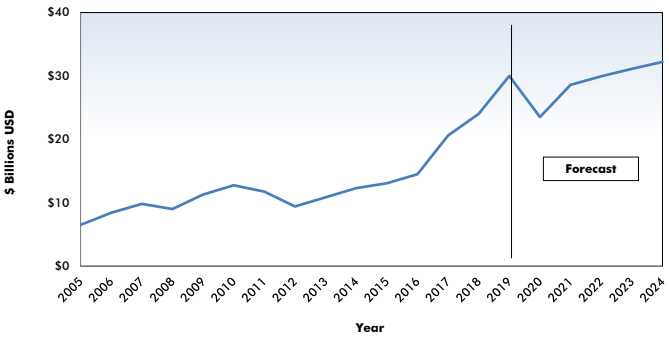
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

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



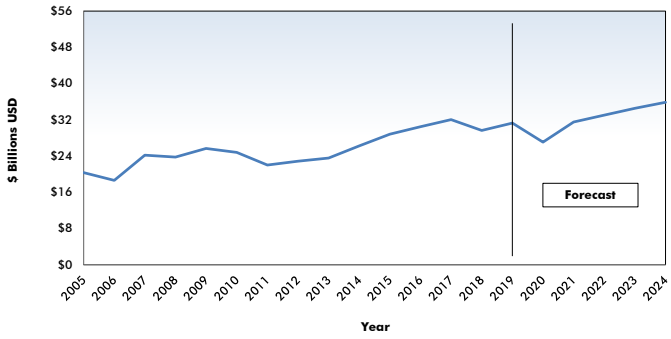
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

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



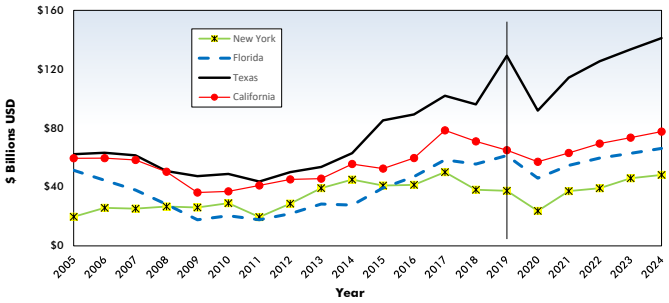
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

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



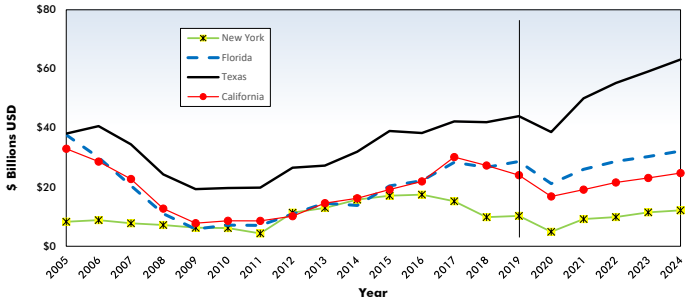
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

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



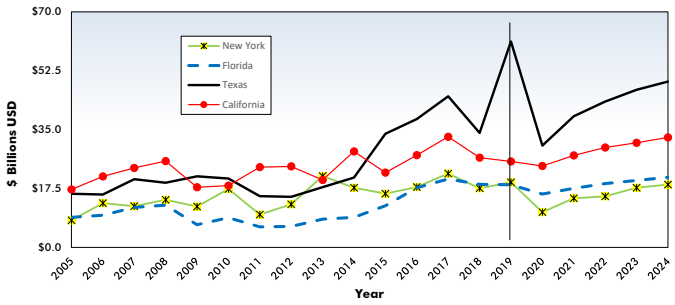
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

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



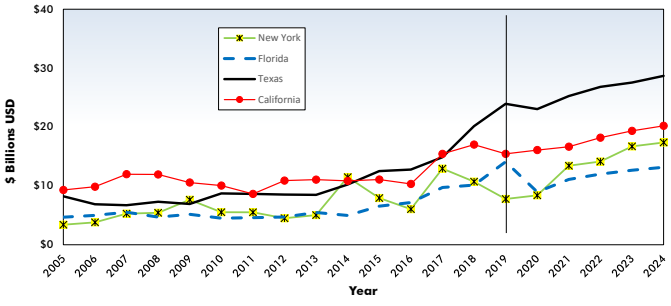
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

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				
	2018	2019	2020	2021	2022	2023	2024
Single-family	14.487	12.331	8.576	11.230	12.522	13.469	14.359
Multi-family	15.247	17.327	8.894	12.480	13.383	14.333	14.942
TOTAL RESIDENTIAL	29.733	29.657	17.470	23.710	25.905	27.802	29.301
(Yr/yr % change)	*-6.1%*	*-0.3%*	*-41.1%*	*35.7%*	*9.3%*	*7.3%*	*5.4%*
Hotels/Motels	0.406	0.624	0.502	0.506	0.611	0.681	0.734
Private Offices	1.970	3.717	2.368	3.095	3.207	3.162	3.032
Govenmental Offices	1.541	3.056	1.849	2.112	2.290	2.389	2.458
Shopping/Retail	0.870	2.256	1.054	1.249	1.337	1.389	1.427
Retail Miscellaneous	0.184	0.232	0.119	0.194	0.218	0.237	0.252
Parking Garages	0.192	0.383	0.147	0.185	0.229	0.240	0.249
Amusement	2.400	1.834	0.911	1.368	1.563	1.654	1.733
Warehouses	1.865	1.245	0.677	0.952	1.242	1.401	1.484
TOTAL COMMERCIAL	9.428	13.347	7.627	9.661	10.697	11.154	11.370
(Yr/yr % change)	4.0%	41.6%	-42.9%	26.7%	10.7%	4.3%	1.9%
TOTAL INDUSTRIAL (manufacturing)	19.373	2.928	3.998	4.997	5.803	6.704	7.182
(Yr/yr % change)	*441.1%*	*-84.9%*	*36.5%*	*25.0%*	*16.1%*	*15.5%*	*7.1%*
Religious	0.153	0.050	0.044	0.068	0.072	0.075	0.077
Hospitals/Clinics	3.385	3.160	2.502	3.101	3.498	3.886	4.202
MED misc	0.282	0.273	0.268	0.401	0.473	0.501	0.529
Transportation Terminals*	6.991	1.152	0.572	0.897	2.175	2.905	3.172
Police/Fire	2.083	0.900	0.614	0.833	0.954	0.992	1.027
Educational Facilities	4.204	4.687	2.449	3.276	3.908	4.005	4.076
TOTAL INSTITUTIONAL	17.098	10.222	6.449	8.575	11.079	12.364	13.083
(Yr/yr % change)	*60.5%*	*-40.2%*	*-36.9%*	*33.0%*	*29.2%*	*11.6%*	*5.8%*
TOTAL NON-RES BUILDING	45.899	26.497	18.073	23.234	27.580	30.222	31.635
(Yr/yr % change)	*97.0%*	*-42.3%*	*-31.8%*	*28.6%*	*18.7%*	*9.6%*	*4.7%*
Bridges	6.703	2.117	2.400	3.357	3.753	3.975	4.106
Dams/Canal/Marine	0.927	0.651	0.535	0.805	0.895	0.968	1.025
Water & Sewage Treatment	6.122	3.684	2.285	3.619	4.185	4.650	4.958
Roads	10.006	8.854	5.470	7.983	9.372	10.137	10.712
Power Infrastructure	3.098	3.046	1.528	4.560	5.155	5.821	6.384
All Other Civil (Oil & Gas etc.)	8.284	17.501	8.859	12.205	15.772	18.374	20.474
TOTAL ENGINEERING	*35.140*	*35.854*	*21.077*	*32.529*	*39.132*	*43.925*	*47.659*
(Yr/yr % change)	*20.7%*	*2.0%*	*-41.2%*	*54.3%*	*20.3%*	*12.2%*	*8.5%*
TOTAL NON-RESIDENTIAL	81.039	62.351	39.151	55.762	66.712	74.147	79.294
(Yr/yr % change)	*54.6%*	*-23.1%*	*-37.2%*	*42.4%*	*19.6%*	*11.1%*	*6.9%*
GRAND TOTAL	110.772	92.008	56.621	79.472	92.618	101.950	108.596
(Yr/yr % change)	*31.8%*	*-16.9%*	*-38.5%*	*40.4%*	*16.5%*	*10.1%*	*6.5%*

* 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'.

The outsized percentage-changes in the Grand Total are due to a couple of mega projects ($4 billion for the Gordie Howe bridge and $10 billion for LNG work in NW B.C.) breaking ground in 2018.

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				
	2018	2019	2020	2021	2022	2023	2024
Summary							
CIVIL	35.140	35.854	21.077	32.529	39.132	43.925	47.659
NON-RESIDENTIAL BUILDING	45.899	26.497	18.073	23.234	27.580	30.222	31.635
RESIDENTIAL	29.733	29.657	17.470	23.710	25.905	27.802	29.301
GRAND TOTAL	110.772	92.008	56.621	79.472	92.618	101.950	108.596
Verticals							
All Other Civil	8.284	17.501	8.859	12.205	15.772	18.374	20.474
Bridges	6.703	2.117	2.400	3.357	3.753	3.975	4.106
Dams / Canals / Marine Work	0.927	0.651	0.535	0.805	0.895	0.968	1.025
Power Infrastructure	3.098	3.046	1.528	4.560	5.155	5.821	6.384
Roads	10.006	8.854	5.470	7.983	9.372	10.137	10.712
Water and Sewage Treatment	6.122	3.684	2.285	3.619	4.185	4.650	4.958
CIVIL	35.140	35.854	21.077	32.529	39.132	43.925	47.659
(Yr/yr % change)	*20.7%*	*2.0%*	*-41.2%*	*54.3%*	*20.3%*	*12.2%*	*8.5%*
Offices (private)	1.970	3.717	2.368	3.095	3.207	3.162	3.032
Parking Garages	0.192	0.383	0.147	0.185	0.229	0.240	0.249
Transportation Terminals	6.991	1.152	0.572	0.897	2.175	2.905	3.172
Commercial	9.153	5.252	3.087	4.177	5.612	6.308	6.453
(Yr/yr % change)	*338.8%*	*-42.6%*	*-41.2%*	*35.3%*	*34.3%*	*12.4%*	*2.3%*
Amusement	2.400	1.834	0.911	1.368	1.563	1.654	1.733
Religious	0.153	0.050	0.044	0.068	0.072	0.075	0.077
Community	2.553	1.884	0.955	1.435	1.635	1.729	1.810
(Yr/yr % change)	*6.6%*	*-26.2%*	*-49.3%*	*50.3%*	*13.9%*	*5.7%*	*4.7%*
Educational	4.204	4.687	2.449	3.276	3.908	4.005	4.076
(Yr/yr % change)	*0.6%*	*11.5%*	*-47.7%*	*33.8%*	*19.3%*	*2.5%*	*1.8%*
Fire and Police Stations	2.083	0.900	0.614	0.833	0.954	0.992	1.027
Government Offices	1.541	3.056	1.849	2.112	2.290	2.389	2.458
Government	3.624	3.956	2.464	2.945	3.244	3.381	3.485
(Yr/yr % change)	*50.2%*	*9.2%*	*-37.7%*	*19.5%*	*10.2%*	*4.2%*	*3.1%*
Manufacturing	19.373	2.928	3.998	4.997	5.803	6.704	7.182
Warehouses	1.865	1.245	0.677	0.952	1.242	1.401	1.484
Industrial	21.238	4.173	4.674	5.949	7.045	8.105	8.667
(Yr/yr % change)	*324.4%*	*-80.4%*	*12.0%*	*27.3%*	*18.4%*	*15.1%*	*6.9%*
Hospitals / Clinics	3.385	3.160	2.502	3.101	3.498	3.886	4.202
Medical Misc.	0.282	0.273	0.268	0.401	0.473	0.501	0.529
Medical	3.667	3.433	2.770	3.501	3.971	4.386	4.731
(Yr/yr % change)	*-24.1%*	*-6.4%*	*-19.3%*	*26.4%*	*13.4%*	*10.5%*	*7.9%*
Hotels	0.406	0.624	0.502	0.506	0.611	0.681	0.734
Retail Misc.	0.184	0.232	0.119	0.194	0.218	0.237	0.252
Shopping	0.870	2.256	1.054	1.249	1.337	1.389	1.427
Retail	1.460	3.112	1.675	1.950	2.166	2.307	2.414
(Yr/yr % change)	*-38.9%*	*113.2%*	*-46.2%*	*16.4%*	*11.1%*	*6.5%*	*4.6%*
NON-RESIDENTIAL BUILDING	45.899	26.497	18.073	23.234	27.580	30.222	31.635
(Yr/yr % change)	*97.0%*	*-42.3%*	*-31.8%*	*28.6%*	*18.7%*	*9.6%*	*4.7%*
Multi-Family	15.247	17.327	8.894	12.480	13.383	14.333	14.942
Single-Family	14.487	12.331	8.576	11.230	12.522	13.469	14.359
RESIDENTIAL	29.733	29.657	17.470	23.710	25.905	27.802	29.301
(Yr/yr % change)	*-6.1%*	*-0.3%*	*-41.1%*	*35.7%*	*9.3%*	*7.3%*	*5.4%*
TOTAL NON-RESIDENTIAL	81.039	62.351	39.151	55.762	66.712	74.147	79.294
(Yr/yr % change)	*54.6%*	*-23.1%*	*-37.2%*	*42.4%*	*19.6%*	*11.1%*	*6.9%*
GRAND TOTAL	110.772	92.008	56.621	79.472	92.618	101.950	108.596
(Yr/yr % change)	*31.8%*	*-16.9%*	*-38.5%*	*40.4%*	*16.5%*	*10.1%*	*6.5%*

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) 2019	Forecasts (Year versus previous year % change) 2020	2021	2022	2023	2024
Atlantic region	$3,552	-32.9%	65.4%	19.1%	7.5%	4.9%
Quebec	$19,621	-57.0%	64.8%	18.5%	9.9%	6.2%
Ontario	$28,135	-32.8%	27.2%	13.6%	8.2%	5.7%
Manitoba	$2,658	-58.5%	42.6%	20.1%	7.2%	6.1%
Saskatchewan	$1,640	-35.1%	40.9%	14.2%	19.0%	6.8%
Alberta	$17,956	-34.8%	49.7%	18.2%	11.0%	6.5%
British Columbia	$18,447	-29.3%	30.4%	16.7%	12.0%	8.2%
Canada	$92,008	-38.5%	40.4%	16.5%	10.1%	6.5%

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

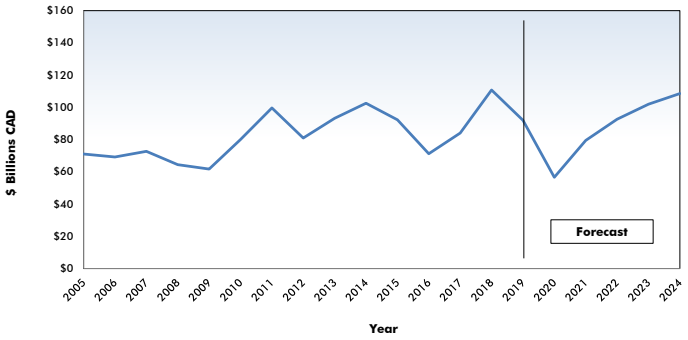
Table 10: Canada Four Largest Provinces: Type-of-Structure Forecasts

($ Billions CAD)

		Actuals 2018	2019	Forecasts 2020	2021	2022	2023	2024
Quebec	Residential	4.129	4.828	2.686	4.611	5.175	5.483	5.752
	Non-res Building	12.743	7.267	3.157	4.193	5.291	6.005	6.349
	Engineering/Civil	5.005	7.526	2.589	5.094	6.008	6.623	7.140
	Total	21.877	19.621	8.433	13.898	16.474	18.111	19.240
(Yr vs previous yr % Change)		*57.8%*	*-10.3%*	*-57.0%*	*64.8%*	*18.5%*	*9.9%*	*6.2%*
Ontario	Residential	13.738	12.611	8.018	10.219	11.020	11.683	12.281
	Non-res Building	9.296	8.805	6.768	6.781	7.973	8.715	9.108
	Engineering/Civil	12.393	6.719	4.112	7.045	8.314	9.137	9.827
	Total	35.427	28.135	18.898	24.044	27.307	29.534	31.216
(Yr vs previous yr % Change)		*35.2%*	*-20.6%*	*-32.8%*	*27.2%*	*13.6%*	*8.2%*	*5.7%*
Alberta	Residential	3.504	3.853	2.435	3.327	3.554	3.911	4.164
	Non-res Building	7.601	4.121	2.502	4.736	5.667	5.965	6.076
	Engineering/Civil	6.098	9.982	6.768	9.458	11.487	13.107	14.241
	Total	17.203	17.956	11.706	17.521	20.708	22.983	24.480
(Yr vs previous yr % Change)		*-20.1%*	*4.4%*	*-34.8%*	*49.7%*	*18.2%*	*11.0%*	*6.5%*
British Columbia	Residential	6.321	6.500	3.361	3.985	4.431	4.837	5.098
	Non-res Building	12.955	3.522	3.962	4.871	5.425	6.063	6.507
	Engineering/Civil	7.320	8.425	5.712	8.140	9.979	11.317	12.440
	Total	26.596	18.447	13.035	16.996	19.836	22.216	24.045
(Yr vs previous yr % Change)		*129.7%*	*-30.6%*	*-29.3%*	*30.4%*	*16.7%*	*12.0%*	*8.2%*

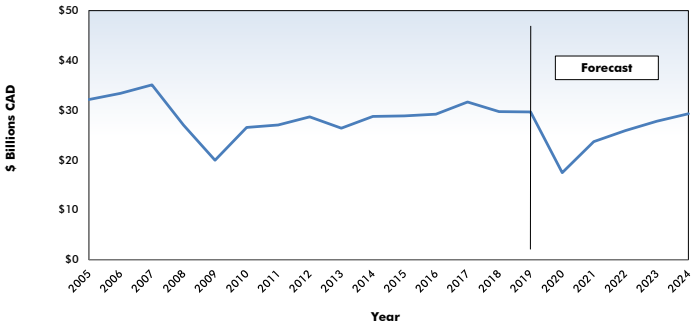
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect.
Table: ConstructConnect.

Graph 19: Canadian Grand Total Construction Starts — ConstructConnect



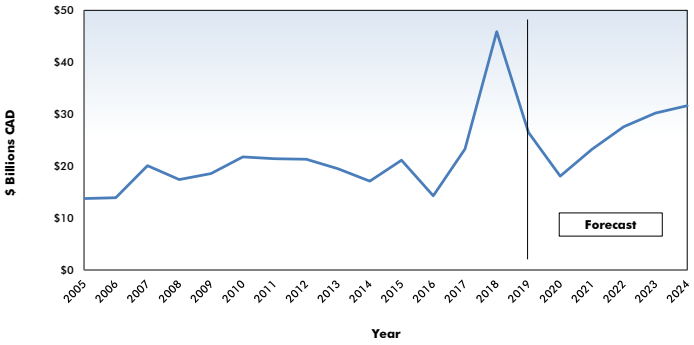
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

Graph 20: Canadian Residential Construction Starts — ConstructConnect



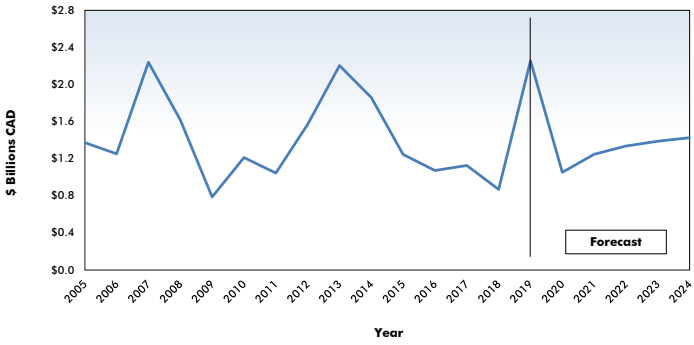
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

Graph 21: Canadian Non-Residential Building Starts — ConstructConnect



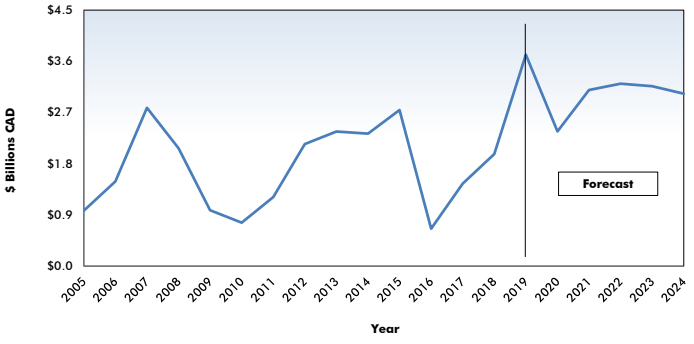
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

Graph 22: Canadian Shopping/Retail Construction Starts — ConstructConnect



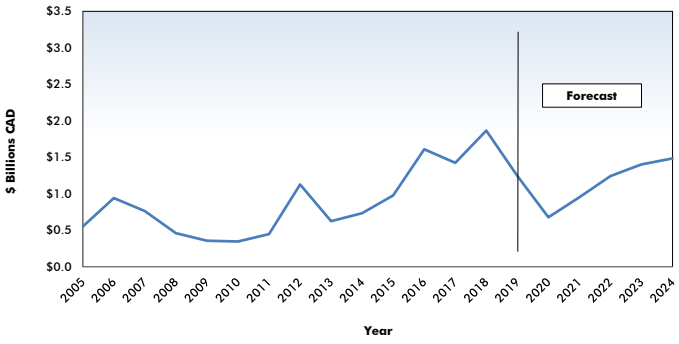
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

Graph 23: Canadian Private Offices Construction Starts — ConstructConnect



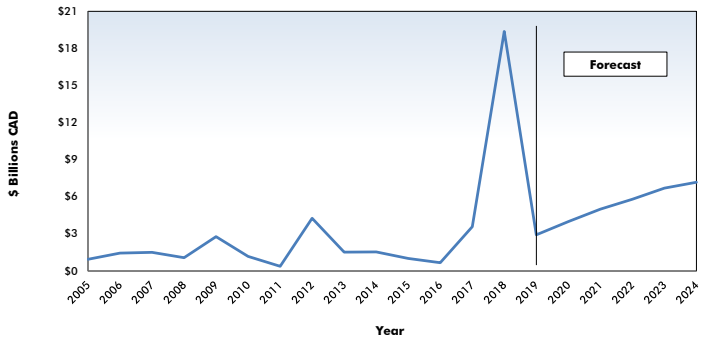
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

Graph 24: Canadian Warehouse Construction Starts — ConstructConnect



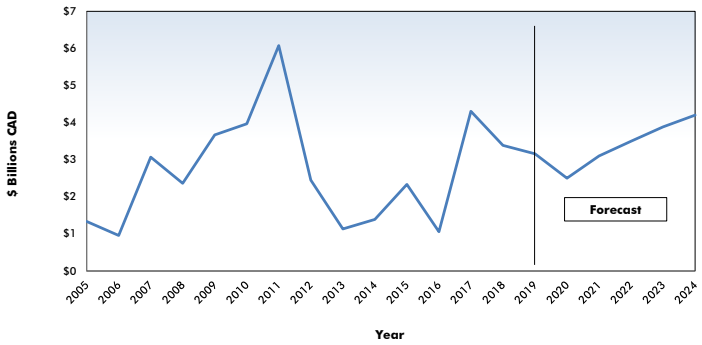
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

Graph 25: Canadian Industrial/Manufacturing Construction Starts — ConstructConnect



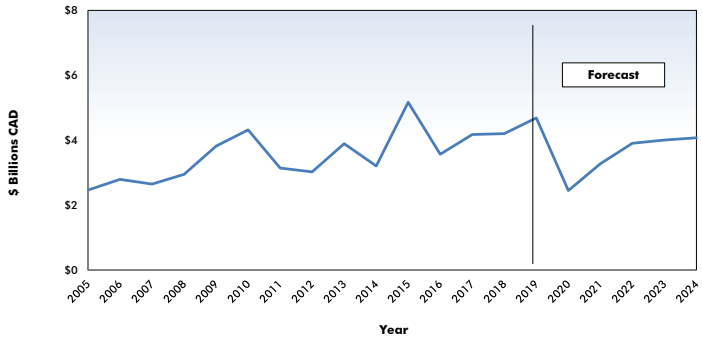
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

Graph 26: Canadian Hospital/Clinic Construction Starts — ConstructConnect



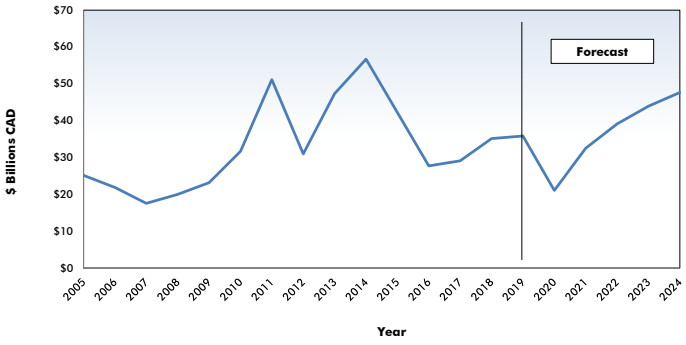
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

Graph 27: Canadian Education Construction Starts — ConstructConnect



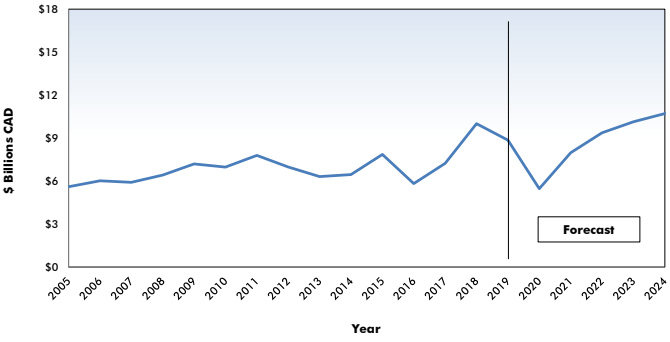
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

Graph 28: Canadian Engineering Construction Starts — ConstructConnect



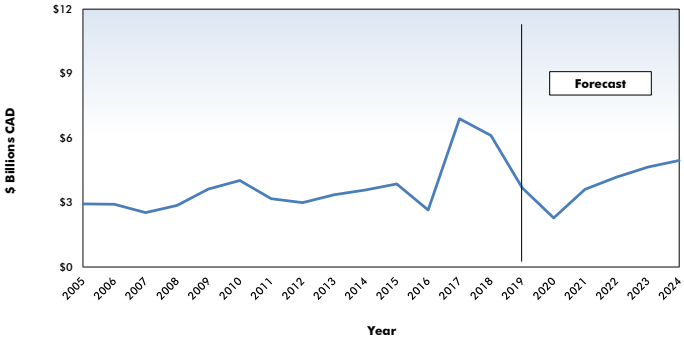
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

Graph 29: Canadian Roadwork Construction Starts — ConstructConnect



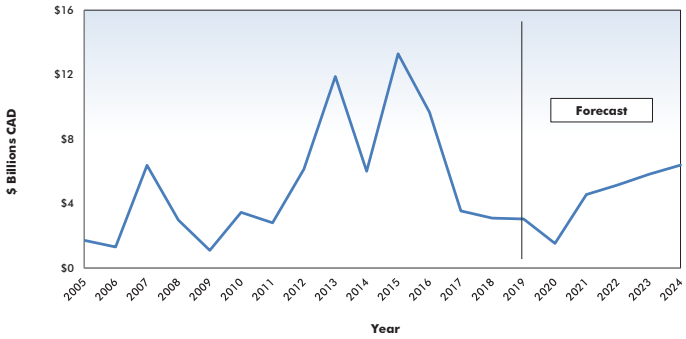
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

Graph 30: Canadian Water and Sewage Construction Starts — ConstructConnect



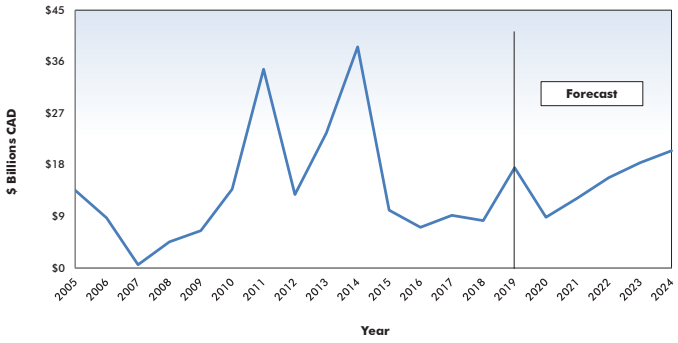
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

Graph 31: Canadian Power Infrastructure Construction Starts — ConstructConnect



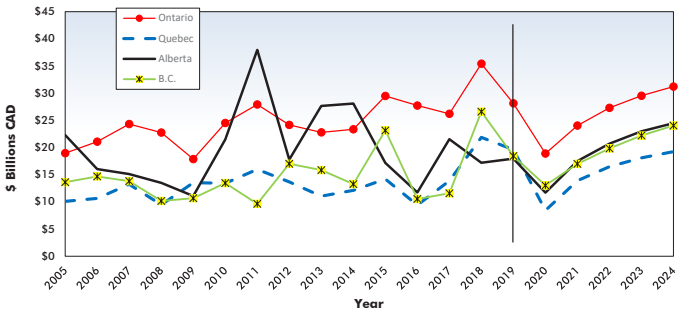
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

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



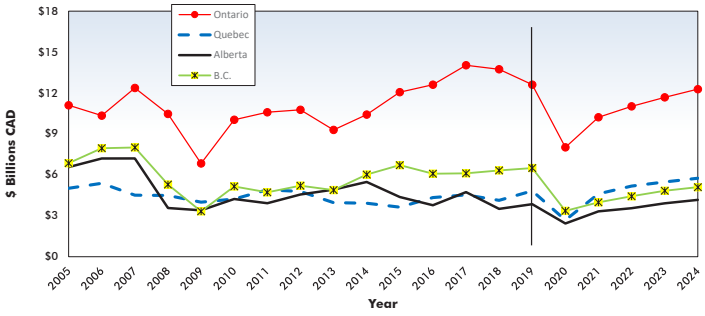
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

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



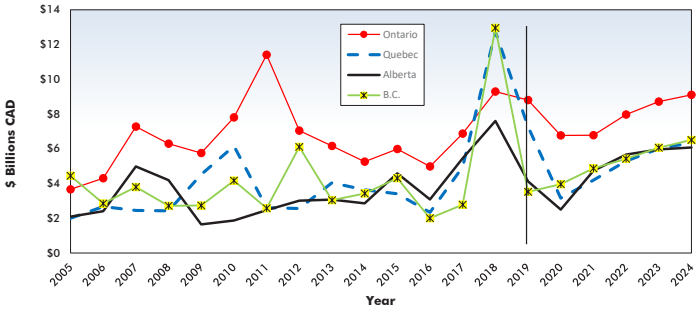
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

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



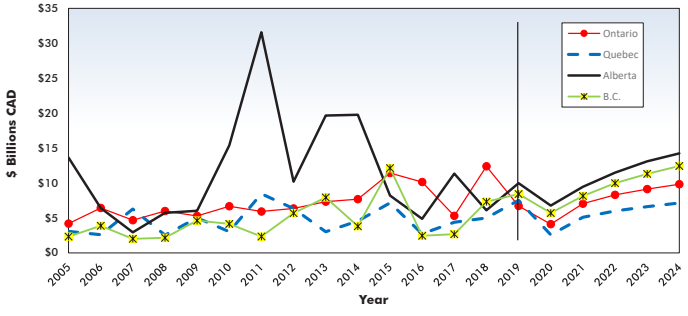
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

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				
	2018	2019	2020	2021	2022	2023	2024
Single-family	1,673.7	1,644.0	1,362.9	1,581.3	1,685.0	1,785.7	1,886.9
Multi-family	526.7	535.0	325.3	455.2	500.1	517.9	548.3
TOTAL RESIDENTIAL	2,200.5	2,179.0	1,688.1	2,036.6	2,185.1	2,303.6	2,435.2
(Yr/yr % change)	*-4.5%*	*-1.0%*	*-22.5%*	*20.6%*	*7.3%*	*5.4%*	*5.7%*
Hotels/Motels	109.9	100.4	50.6	58.4	62.0	66.0	69.2
Shopping/Retail	76.2	67.4	47.0	54.6	60.3	65.5	70.2
Parking Garages	28.3	34.0	25.9	29.7	32.7	34.3	35.3
Amusement	28.0	23.2	16.9	19.2	21.8	22.8	23.8
Private Offices	92.7	104.1	73.9	85.7	87.3	91.2	96.2
Govenmental Offices	15.6	16.4	16.7	17.6	17.9	18.8	19.2
Laboratories (Schools & Industrial)	4.9	2.8	5.0	5.7	6.3	6.9	7.5
Warehouses	203.9	194.5	148.6	160.0	176.6	191.0	200.6
Sports Stadium/Convention Center	13.1	19.8	13.1	12.9	14.8	16.1	17.4
Transportation Terminals	6.2	9.1	6.1	8.4	10.6	12.9	15.1
TOTAL COMMERCIAL	578.8	571.8	403.8	452.3	490.3	525.5	554.5
(Yr/yr % change)	*-15.1%*	*-1.2%*	*-29.4%*	*12.0%*	*8.4%*	*7.2%*	*5.5%*
TOTAL INDUSTRIAL (manufacturing)	99.2	91.7	24.0	35.1	43.1	51.4	57.5
(Yr/yr % change)	*7.5%*	*-7.5%*	*-73.9%*	*46.4%*	*22.9%*	*19.2%*	*11.9%*
Religious	6.2	4.9	2.8	3.9	4.1	4.1	4.2
Hospitals/Clinics	25.4	28.1	31.2	27.0	34.7	42.3	50.1
Nursing Homes/Assisted Living	45.5	40.5	32.9	43.7	47.9	51.3	54.4
Libraries/Museums	3.9	3.1	2.8	3.5	3.7	3.7	3.8
Courthouse	2.8	1.8	2.3	2.3	2.7	3.2	3.3
Police/Fire	7.7	7.5	6.5	8.0	8.3	8.6	8.9
Prisons	4.5	2.2	1.6	1.9	1.9	2.0	2.0
Military	10.8	13.2	16.2	14.6	14.5	14.9	15.4
Educational Facilities	156.3	166.2	127.4	149.2	155.3	160.4	164.9
MED misc	22.7	19.3	18.6	21.0	23.2	24.4	25.2
TOTAL INSTITUTIONAL	285.8	286.9	242.3	275.2	296.4	314.9	332.2
(Yr/yr % change)	*-6.8%*	*0.4%*	*-15.6%*	*13.6%*	*7.7%*	*6.3%*	*5.5%*
Miscellaneous Non-Res Building	25.9	26.1	22.0	24.5	26.0	27.3	28.1
TOTAL NON-RES BLDG	989.7	976.5	692.0	787.1	855.8	919.1	972.3
(Yr/yr % change)	*-10.8%*	*-1.3%*	*-29.1%*	*13.7%*	*8.7%*	*7.4%*	*5.8%*
RESIDENTIAL + NON-RES BLDG	3,190.1	3,155.5	2,380.1	2,823.6	3,040.9	3,222.8	3,407.4
(Yr/yr % change)	*-6.6%*	*-1.1%*	*-24.6%*	*18.6%*	*7.7%*	*6.0%*	*5.7%*

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				
	2018	2019	2020	2021	2022	2023	2024
Summary							
NON-RESIDENTIAL BUILDING	989.7	976.5	692.0	787.1	855.8	919.1	972.3
RESIDENTIAL	2,200.5	2,179.0	1,688.1	2,036.6	2,185.1	2,303.6	2,435.2
RESIDENTIAL + NON-RESIDENTIAL BUILDING	3,190.1	3,155.5	2,380.1	2,823.6	3,040.9	3,222.8	3,407.4
Verticals							
Offices (private)	92.7	104.1	73.9	85.7	87.3	91.2	96.2
Parking Garages	28.3	34.0	25.9	29.7	32.7	34.3	35.3
Transportation Terminals	6.2	9.1	6.1	8.4	10.6	12.9	15.1
Commercial	127.2	147.3	105.9	123.9	130.6	138.5	146.6
(Yr/yr % change)	*-12.4%*	*15.7%*	*-28.1%*	*17.0%*	*5.4%*	*6.1%*	*5.9%*
Amusement	28.0	23.2	16.9	19.2	21.8	22.8	23.8
Libraries / Museums	3.9	3.1	2.8	3.5	3.7	3.7	3.8
Religious	6.2	4.9	2.8	3.9	4.1	4.1	4.2
Sports Arenas / Convention Centers	13.1	19.8	13.1	12.9	14.8	16.1	17.4
Community	51.3	51.0	35.6	39.5	44.3	46.7	49.1
(Yr/yr % change)	*-20.1%*	*-0.5%*	*-30.2%*	*11.0%*	*12.2%*	*5.5%*	*5.0%*
College / University	40.0	37.8	30.3	34.8	35.7	37.1	38.3
Elementary / Pre School	43.2	48.6	35.4	43.4	45.2	46.9	48.6
Jr / Sr High School	69.0	73.7	57.9	66.3	69.3	71.0	72.4
Special / Vocational	4.1	6.1	3.8	4.7	5.1	5.4	5.6
Educational	156.3	166.2	127.4	149.2	155.3	160.4	164.9
(Yr/yr % change)	*-3.3%*	*6.3%*	*-23.3%*	*17.1%*	*4.1%*	*3.3%*	*2.8%*
Courthouses	2.8	1.8	2.3	2.3	2.7	3.2	3.3
Fire and Police Stations	7.7	7.5	6.5	8.0	8.3	8.6	8.9
Government Offices	15.6	16.4	16.7	17.6	17.9	18.8	19.2
Prisons	4.5	2.2	1.6	1.9	1.9	2.0	2.0
Government	30.5	28.0	27.0	29.8	30.8	32.6	33.5
(Yr/yr % change)	*-1.5%*	*-8.1%*	*-3.5%*	*10.1%*	*3.6%*	*5.6%*	*2.8%*
Industrial Labs / Labs / School Labs	4.9	2.8	5.0	5.7	6.3	6.9	7.5
Manufacturing	99.2	91.7	24.0	35.1	43.1	51.4	57.5
Warehouses	203.9	194.5	148.6	160.0	176.6	191.0	200.6
Industrial	308.0	289.0	177.6	200.8	226.0	249.3	265.6
(Yr/yr % change)	*-1.5%*	*-6.2%*	*-38.6%*	*13.1%*	*12.6%*	*10.3%*	*6.5%*
Hospitals / Clinics	25.4	28.1	31.2	27.0	34.7	42.3	50.1
Medical Misc.	22.7	19.3	18.6	21.0	23.2	24.4	25.2
Nursing Homes	45.5	40.5	32.9	43.7	47.9	51.3	54.4
Medical	93.6	87.9	82.7	91.8	105.9	118.0	129.7
(Yr/yr % change)	*-11.2%*	*-6.0%*	*-5.9%*	*10.9%*	*15.4%*	*11.5%*	*9.9%*
Military	10.8	13.2	16.2	14.6	14.5	14.9	15.4
(Yr/yr % change)	*-15.1%*	*21.5%*	*22.9%*	*-9.5%*	*-0.6%*	*2.3%*	*3.1%*
Hotels	109.9	100.4	50.6	58.4	62.0	66.0	69.2
Retail Misc.	25.9	26.1	22.0	24.5	26.0	27.3	28.1
Shopping	76.2	67.4	47.0	54.6	60.3	65.5	70.2
Retail	212.0	193.9	119.6	137.5	148.4	158.7	167.5
(Yr/yr % change)	*-23.3%*	*-8.5%*	*-38.3%*	*15.0%*	*7.9%*	*7.0%*	*5.5%*
NON-RESIDENTIAL BUILDING	989.7	976.5	692.0	787.1	855.8	919.1	972.3
(Yr/yr % change)	*-10.8%*	*-1.3%*	*-29.1%*	*13.7%*	*8.7%*	*7.4%*	*5.8%*
Multi-Family	526.7	535.0	325.3	455.2	500.1	517.9	548.3
Single-Family	1,673.7	1,644.0	1,362.9	1,581.3	1,685.0	1,785.7	1,886.9
RESIDENTIAL	2,200.5	2,179.0	1,688.1	2,036.6	2,185.1	2,303.6	2,435.2
(Yr/yr % change)	*-4.5%*	*-1.0%*	*-22.5%*	*20.6%*	*7.3%*	*5.4%*	*5.7%*
RESIDENTIAL + NON-RESIDENTIAL BUILDING	3,190.1	3,155.5	2,380.1	2,823.6	3,040.9	3,222.8	3,407.4
(Yr/yr % change)	*-6.6%*	*-1.1%*	*-24.6%*	*18.6%*	*7.7%*	*6.0%*	*5.7%*

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				
	2018	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Single-family	124.8	106.4	82.2	101.3	109.2	116.4	123.9
Multi-family	80.9	87.3	45.9	63.7	67.9	72.6	75.7
TOTAL RESIDENTIAL	205.7	193.7	128.1	165.0	177.1	189.1	199.6
(Yr/yr % change)	*-8.8%*	*-5.8%*	*-33.9%*	*28.9%*	*7.3%*	*6.8%*	*5.6%*
Hotels/Motels	1.9	2.4	3.1	2.1	2.6	2.9	3.1
Private Offices	9.2	10.8	4.4	6.6	7.0	6.9	6.6
Govenmental Offices	1.9	2.3	2.3	2.3	2.5	2.7	2.7
Shopping/Retail	6.5	9.4	6.5	8.1	8.8	9.2	9.4
Retail Miscellaneous	1.1	1.2	0.6	1.0	1.1	1.2	1.2
Parking Garages	0.2	1.4	0.5	0.6	0.7	0.7	0.7
Amusement	4.9	3.4	1.5	2.1	2.4	2.5	2.7
Warehouses	13.0	8.6	6.1	7.9	9.7	10.8	11.4
TOTAL COMMERCIAL	38.8	39.4	25.1	30.6	34.8	36.9	38.0
(Yr/yr % change)	*0.3%*	*1.6%*	*-36.3%*	*21.9%*	*13.6%*	*6.1%*	*3.0%*
TOTAL INDUSTRIAL (manufacturing)	7.9	5.9	4.5	5.6	6.6	7.6	8.5
(Yr/yr % change)	*51.0%*	*-25.6%*	*-23.9%*	*24.3%*	*18.9%*	*15.7%*	*11.2%*
Religious	0.3	0.1	0.2	0.2	0.2	0.3	0.3
Hospitals/Clinics	9.7	8.1	8.0	8.5	9.0	9.5	10.0
MED misc	0.9	1.1	0.7	1.0	1.2	1.2	1.3
Transportation Terminals*	4.0	0.2	0.1	0.3	0.8	1.0	1.4
Police/Fire	1.9	1.3	0.3	0.5	0.7	0.7	0.8
Educational Facilities	11.9	10.8	5.3	6.9	8.1	8.3	8.5
TOTAL INSTITUTIONAL	28.7	21.7	14.5	17.5	20.0	21.1	22.2
(Yr/yr % change)	*11.9%*	*-24.4%*	*-32.9%*	*20.3%*	*14.3%*	*5.6%*	*5.0%*
TOTAL NON-RES BLDG	75.4	67.0	44.1	53.7	61.4	65.6	68.7
(Yr/yr % change)	*8.4%*	*-11.2%*	*-34.1%*	*21.6%*	*14.4%*	*7.0%*	*4.6%*
RESIDENTIAL + NON-RES BLDG	281.0	260.7	172.2	218.7	238.4	254.7	268.3
(Yr/yr % change)	*-4.7%*	*-7.2%*	*-34.0%*	*27.0%*	*9.0%*	*6.8%*	*5.3%*

* 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)

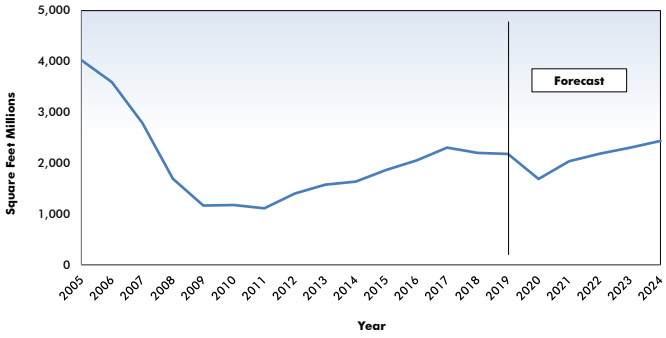
	Actuals		Forecasts				
	2018	2019	2020	2021	2022	2023	2024
Summary							
NON-RESIDENTIAL BUILDING	75.4	67.0	44.1	53.7	61.4	65.6	68.7
RESIDENTIAL	205.7	193.7	128.1	165.0	177.1	189.1	199.6
RESIDENTIAL + NON-RESIDENTIAL BUILDING	281.0	260.7	172.2	218.7	238.4	254.7	268.3
Verticals							
Offices (private)	9.2	10.8	4.4	6.6	7.0	6.9	6.6
Parking Garages	0.2	1.4	0.5	0.6	0.7	0.7	0.7
Transportation Terminals	4.0	0.2	0.1	0.3	0.8	1.0	1.4
Commercial	13.5	12.4	5.0	7.5	8.4	8.7	8.8
(Yr/yr % change)	*74.8%*	*-8.4%*	*-59.7%*	*49.1%*	*13.0%*	*3.1%*	*1.2%*
Amusement	4.9	3.4	1.5	2.1	2.4	2.5	2.7
Religious	0.3	0.1	0.2	0.2	0.2	0.3	0.3
Community	5.2	3.5	1.7	2.3	2.6	2.8	2.9
(Yr/yr % change)	*-14.6%*	*-32.7%*	*-51.5%*	*35.7%*	*14.3%*	*5.9%*	*4.6%*
Educational	11.9	10.8	5.3	6.9	8.1	8.3	8.5
(Yr/yr % change)	*20.7%*	*-8.9%*	*-50.9%*	*30.2%*	*17.7%*	*2.2%*	*1.7%*
Fire and Police Stations	1.9	1.3	0.3	0.5	0.7	0.7	0.8
Government Offices	1.9	2.3	2.3	2.3	2.5	2.7	2.7
Government	3.7	3.5	2.5	2.9	3.2	3.4	3.5
(Yr/yr % change)	*-4.2%*	*-5.9%*	*-28.4%*	*13.8%*	*12.1%*	*5.0%*	*3.3%*
Manufacturing	7.9	5.9	4.5	5.6	6.6	7.6	8.5
Warehouses	13.0	8.6	6.1	7.9	9.7	10.8	11.4
Industrial	20.9	14.5	10.6	13.4	16.3	18.5	19.9
(Yr/yr % change)	*25.9%*	*-30.9%*	*-26.6%*	*26.5%*	*21.5%*	*13.1%*	*7.9%*
Hospitals / Clinics	9.7	8.1	8.0	8.5	9.0	9.5	10.0
Medical Misc.	0.9	1.1	0.7	1.0	1.2	1.2	1.3
Medical	10.5	9.2	8.7	9.5	10.2	10.8	11.3
(Yr/yr % change)	*-14.8%*	*-12.7%*	*-5.8%*	*9.4%*	*7.1%*	*5.9%*	*4.9%*
Hotels	1.9	2.4	3.1	2.1	2.6	2.9	3.1
Retail Misc.	1.1	1.2	0.6	1.0	1.1	1.2	1.2
Shopping	6.5	9.4	6.5	8.1	8.8	9.2	9.4
Retail	9.5	13.0	10.3	11.2	12.5	13.2	13.8
(Yr/yr % change)	*-26.3%*	*36.7%*	*-21.1%*	*8.8%*	*11.4%*	*6.2%*	*4.2%*
NON-RESIDENTIAL BUILDING	75.4	67.0	44.1	53.7	61.4	65.6	68.7
(Yr/yr % change)	*8.4%*	*-11.2%*	*-34.1%*	*21.6%*	*14.4%*	*7.0%*	*4.6%*
Multi-Family	80.9	87.3	45.9	63.7	67.9	72.6	75.7
Single-Family	124.8	106.4	82.2	101.3	109.2	116.4	123.9
RESIDENTIAL	205.7	193.7	128.1	165.0	177.1	189.1	199.6
(Yr/yr % change)	*-8.8%*	*-5.8%*	*-33.9%*	*28.9%*	*7.3%*	*6.8%*	*5.6%*
RESIDENTIAL + NON-RESIDENTIAL BUILDING	281.0	260.7	172.2	218.7	238.4	254.7	268.3
(Yr/yr % change)	*-4.7%*	*-7.2%*	*-34.0%*	*27.0%*	*9.0%*	*6.8%*	*5.3%*

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'.

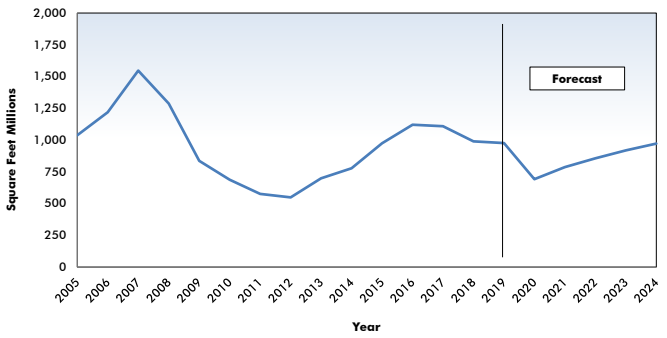
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect / Table: ConstructConnect.

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



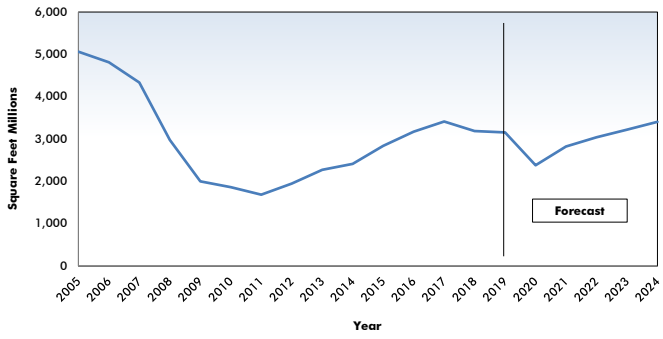
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

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



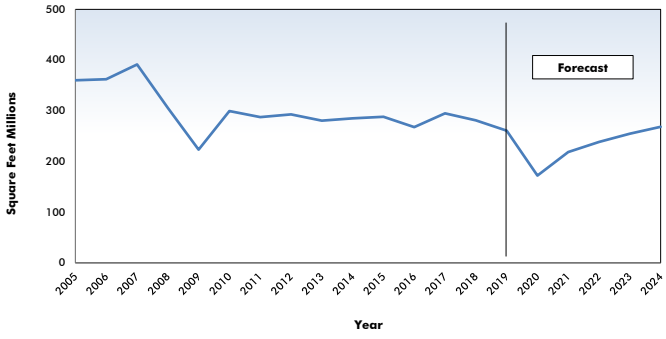
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

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



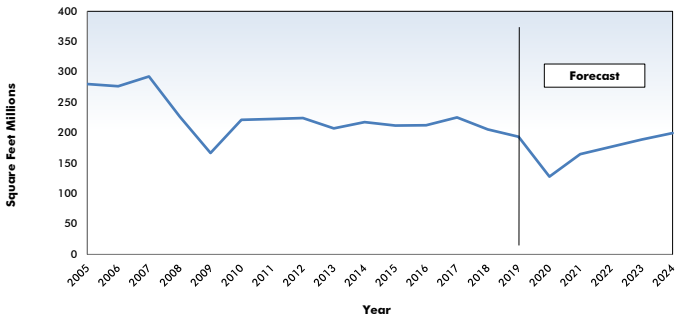
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

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



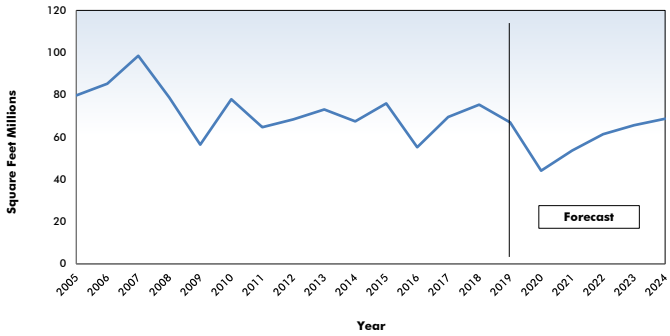
Source of actuals: ConstructConnect "Insight" / Forecasts: Oxford Economics and ConstructConnect. Chart: ConstructConnect.

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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