

November 2022 (based on October 2022 Starts Stats)

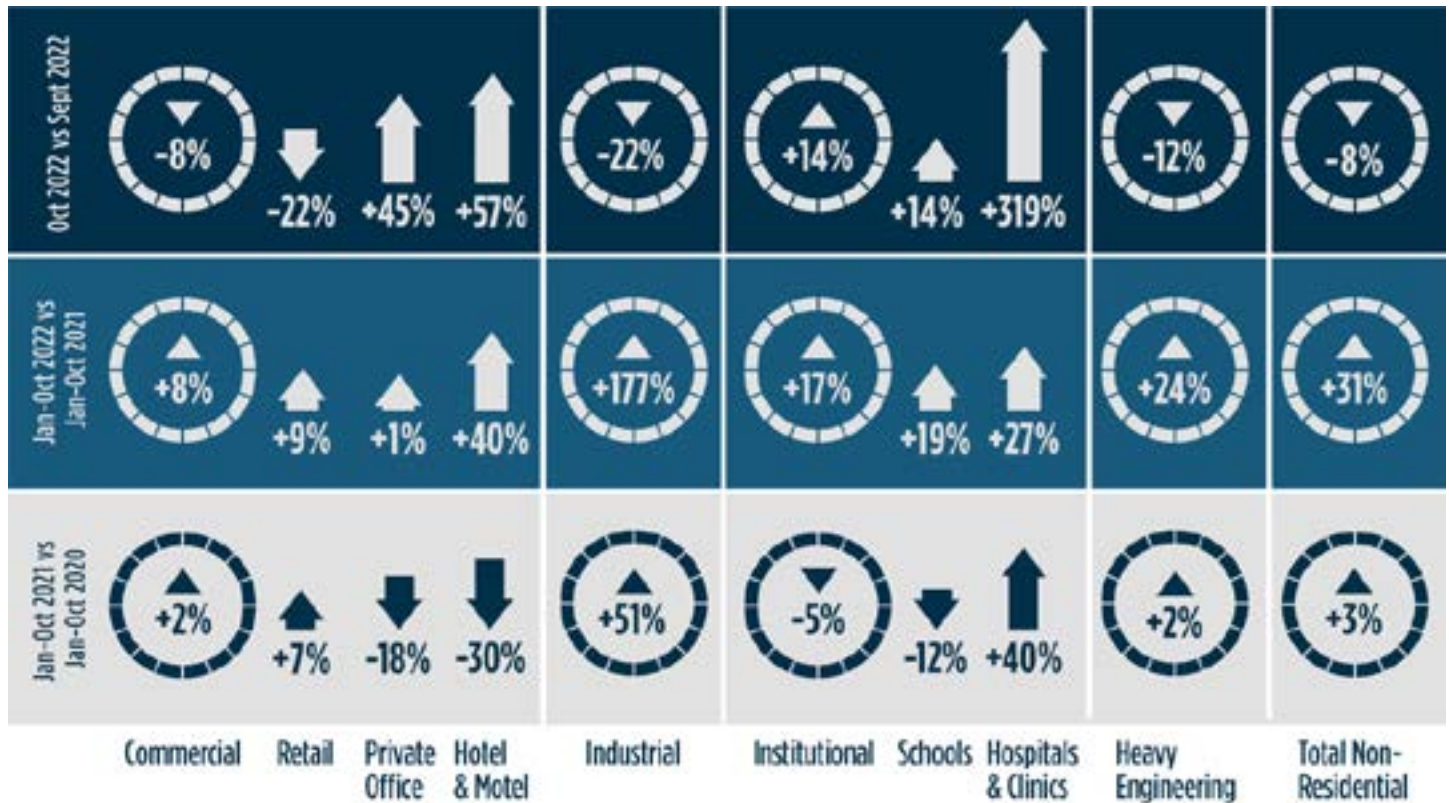
Construction Industry Snapshot



October's Nonresidential Construction Starts -8% M/M, +42% Y/Y & +31% Ytd

ConstructConnect announced today that Oct 2022's volume of construction starts, excluding residential work, was \$47.5 billion, a decline of -8.2% compared with Sept's figure of \$51.7 billion. The drop was despite another excellent month for mega projects.

October 2022 compared with October 2021 was +42.2%. The year-to-date performance of nonresidential starts has been +30.8% vs Jan-Oct 2021. Through Oct 2022, grand total starts (i.e., including residential) were +16.9%.



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Mega Project Authorizations Remain Upbeat

ConstructConnect announced today that October 2022's volume of construction starts, excluding residential work, was \$47.5 billion (green shaded box, bottom of page 11), a decline of -8.2% compared with September's figure of \$51.7 billion (originally reported as \$51.1 billion).

The month-to-month decrease came despite October being another excellent month for mega-sized project initiations. ('Megs' carry an estimated value of a billion dollars or more each.) October's three super-big projects summing to \$9.4 billion, however, weren't quite a match for September's four outsized projects, adding to \$14.2 billion.

The latest month's largest undertakings were a new EV car plant and battery manufacturing complex in Georgia, an ammonia production facility in Texas, and a giant general hospital in Massachusetts (see Top 10 list, page 8).

October's three mega projects did lift the total for the year to \$83.8 billion from 25 projects. With two more months still to go in 2022, that already establishes a new annual record. The previous peak year for megas occurred in 2019 when the total was \$79.1 billion from 35 projects.

Also noteworthy is that the average estimated value for mega project starts has risen substantially, from \$2.3 billion three years ago to \$3.2 billion in the current year. Estimators are factoring in higher input costs. Plus, the nature of the biggest projects has changed. Today's chip manufacturing plants, greenfield site battery production lines, and LNG exporting facilities, are huge undertakings.

October 2022's total dollar volume of nonresidential construction starts was up by +42.2% when compared with October 2021. On a year-to-date basis, total nonresidential starts have been +30.8% versus January to October of last year.

To complete the starts picture, the GRAND TOTAL (i.e., adding residential to nonresidential activity) in October 2022 was -1.3% m/m, +21.8% y/y and +16.9% ytd.

A Good Ytd for Nonres Building Starts

There are three major sub-categories of total starts: residential, non-residential building and heavy engineering/civil. On a year-to-date percentage-change basis in October, nonresidential building starts turned in the best record, +34.9%. Heavy engineering/civil also managed an exemplary increase, +24.2%. Only residential failed to impress, +0.4%.

On a month-to-month basis in October, though, it was residential (+12.3%) doing better than both nonresidential buildings (-6.4%) and engineering (-11.7%).

No Backing Off in TTM Grand Total Starts

Other statistics often beloved by analysts are trailing twelve-month (TTM) results and these are set out for all the various type-of-structure categories in Table 9 on page 11 of this report.

Grand Total TTM starts in October, at +1.6% on a month-to-month basis, forged ahead nicely. They picked up speed from September's +0.8% and August's +0.3%.

On a year-over-year basis in October, Grand Total TTM starts also performed well, +16.0%, but they weren't dramatically different from September's +14.5%. They were even less of a standout when compared with August's +15.8%.

Manufacturing Makes Statement in PIP Stats

'Starts' compile the total estimated dollar value and square footage of all projects on which ground is broken in any given month. They lead, by nine months to as much as two years, put-in-place (PIP) statistics from the Census Bureau which are analogous to work-in-progress payments as the building of structures proceeds to completion.

PIP numbers cover the 'universe' of construction, new plus all manner of renovation activity, with residential traditionally (i.e., over the decade preceding the pandemic) making up two-fifths (about 40%) of the total and nonresidential, three-fifths (i.e., the bigger portion, at around 60%).

Over the past several years, however, there has been an eye-popping change in the ratio. In 2021's full year PIP results, the residential to nonresidential relationship was about half and half. Through October of this present year, 2022, residential now claims a 52.5% share of the total, with nonresidential holding the other 47.5%.

The January-September 2022 over January-September 2021 total dollar volume of PIP construction was +11.4%. Residential, at +18.8%

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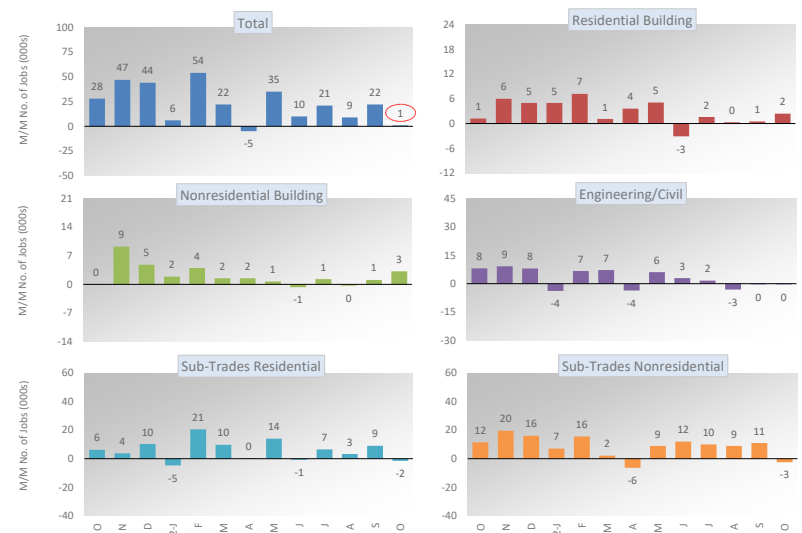
TABLE 1: VALUE OF UNITED STATES NONRESIDENTIAL CONSTRUCTION STARTS — OCTOBER 2022 (ConstructConnect®)

	Jan-Oct 2022 (\$ billions)	% Change Jan-Oct 22 vs Jan-Oct 21	% Change Oct 22 vs Oct 21	% Change Oct 22 vs Sept 22
Hotel/Motel	8.828	39.7%	13.5%	57.0%
Retail/Shopping	12.463	9.0%	0.0%	-22.4%
Parking Garage	1.874	19.2%	-64.3%	-84.4%
Amusement	6.399	11.1%	34.0%	1.2%
Private Office	16.856	1.1%	112.1%	45.2%
Government Office	11.284	12.1%	63.9%	-1.5%
Laboratory	3.783	93.7%	22.0%	-58.2%
Warehouse	23.573	-1.1%	-6.2%	-22.3%
Miscellaneous Commercial *	10.539	-6.3%	-72.4%	-20.3%
COMMERCIAL (big subset)	95.599	7.6%	-7.2%	-8.4%
INDUSTRIAL (Manufacturing)	83.355	177.0%	188.6%	-21.5%
Religious	0.830	-22.2%	-49.2%	53.5%
Hospital/Clinic	19.270	27.0%	151.1%	319.1%
Nursing/Assisted Living	3.530	-35.1%	-53.5%	42.8%
Library/Museum	3.081	1.9%	288.8%	27.4%
Fire/Police/Courthouse/Prison	7.362	14.8%	64.2%	10.3%
Military	8.909	22.4%	49.4%	-10.3%
School/College	62.793	19.2%	54.7%	13.6%
Miscellaneous Medical	7.832	26.3%	-38.3%	-82.2%
INSTITUTIONAL	113.607	16.8%	54.4%	13.9%
Miscellaneous Non-residential	6.262	16.9%	-0.7%	-27.1%
NONRESIDENTIAL BUILDING	298.824	34.9%	46.3%	-6.4%
Airport	6.544	39.5%	28.2%	-53.6%
Road/Highway	74.492	26.2%	14.9%	-30.0%
Bridge	24.622	59.5%	68.6%	-19.8%
Dam/Marine	7.280	18.4%	4.3%	17.1%
Water/Sewage	36.884	27.4%	56.2%	8.1%
Miscellaneous Civil (power, pipelines, etc.)	18.653	-12.7%	55.7%	111.0%
HEAVY ENGINEERING (Civil)	168.476	24.2%	34.6%	-11.7%
TOTAL NONRESIDENTIAL	467.300	30.8%	42.2%	-8.2%

* Includes transportation terminals and sports arenas.

Source: ConstructConnect Research Group/Table: ConstructConnect.

GRAPH 1: CHANGE IN LEVEL OF U.S. CONSTRUCTION EMPLOYMENT, MONTH TO MONTH (M/M) — TOTAL & BY CATEGORIES — OCTOBER 2022



Monthly average jobs creation in the U.S. construction sector so far in 2022 has been +18,000. Standalone Oct was well below average. Last year's comparable figure for Jan-Oct was +10,000 ... Total U.S. jobs growth is presently +3.6% y/y. Construction is the same, +3.6% y/y.

For each month, 'net' = zero. 'Sub-trade' in BLS data referred to as 'specialty' trade.

Data Source: Bureau of Labor Statistics (BLS)/Chart: ConstructConnect.

Continued from page 2

ytd, was still far ahead of nonresidential, +4.2% ytd. But the latter included at least one sub-category that was making an attention-grabbing statement, manufacturing at +28.3% ytd.

PIP numbers, being more spread out, have smaller peak-over-trough percent-change amplitudes than the 'starts' series. As an additional valuable service for clients and powered by its extensive 'starts' database, ConstructConnect, in partnership with Oxford Economics, a world-leader in econometric modeling, has developed put-in-place construction statistics by types of structure for U.S. states, cities and counties, actuals and forecasts. ConstructConnect's PIP numbers are being released quarterly and are featured in a separate reporting system.

No Movement on Construction Employment in October

Construction's share of U.S. total non-farm employment in the monthly labor market report issued by the Bureau of Labor Statistics (BLS) is slightly more than 5.0%. To claim its proportional share of October's economy-wide number-of-jobs increase of +261,000, the figure for construction would have needed to be +13,000. Instead, it was a disappointing +1,000.

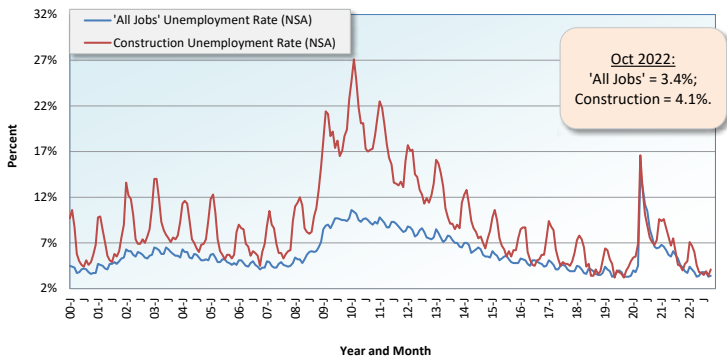
Nevertheless, the monthly average increase in construction employment through the first ten months of this year has been +18,000. This is beating last year's comparable figure of +10,000.

Construction's not seasonally adjusted (NSA) unemployment rate in October was 4.1%, up somewhat from September's 3.4%, but about on a par with October of last year's 4.0%. The latest reading of 4.1% is a little above the nation's 'all jobs' NSA U rate of 3.4%.

Manufacturing's current NSA U rate is 3.1%. Both the manufacturing and

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GRAPH 3: U.S. UNEMPLOYMENT RATES: HEADLINE (I.E., 'ALL JOBS') & CONSTRUCTION (NOT SEASONALLY ADJUSTED (NSA))

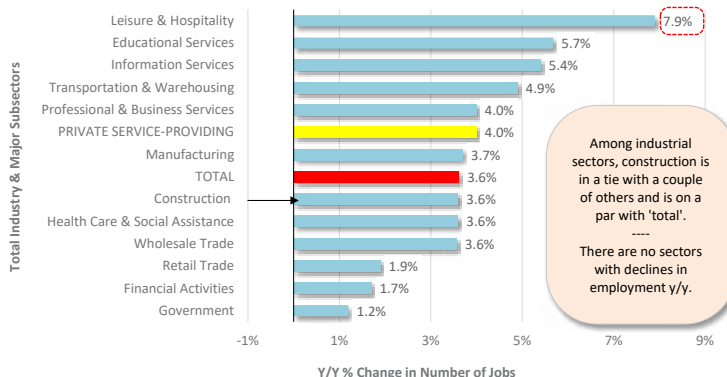


There used to be wide seasonal discrepancies between the unemployment rates for 'all jobs' and for construction, indicating that a career in the latter was more precarious. In recent times, though, the gap has largely disappeared, which should be a help in recruiting drives to sign up more onsite workers.

Current through October, 2022.

Data source: Bureau of Labor Statistics (BLS) / Chart: ConstructConnect.

GRAPH 5: Y/Y JOBS CHANGE, U.S. TOTAL INDUSTRY & MAJOR SUBSECTORS — OCTOBER 2022 (BASED ON SEASONALLY ADJUSTED PAYROLL DATA)

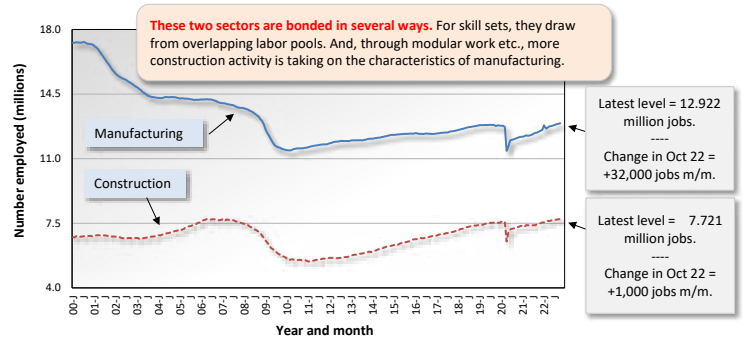


Among industrial sectors, construction is in a tie with a couple of others and is on a par with 'total'.
There are no sectors with declines in employment y/y.

October 2022's y/y changes in employment within the pandemic's initially hardest-hit sector, 'leisure & hospitality', were: 'hotels/motels', +12.1%; 'amusements/gambling', +8.0%; and 'restaurants & bars', +6.9%.

Data source: Payroll Survey, U.S. Bureau of Labor Statistics (Dept of Labor)/Chart: ConstructConnect.

GRAPH 2: U.S. MANUFACTURING VS CONSTRUCTION EMPLOYMENT OCTOBER, 2022 — SEASONALLY ADJUSTED (SA) PAYROLL DATA

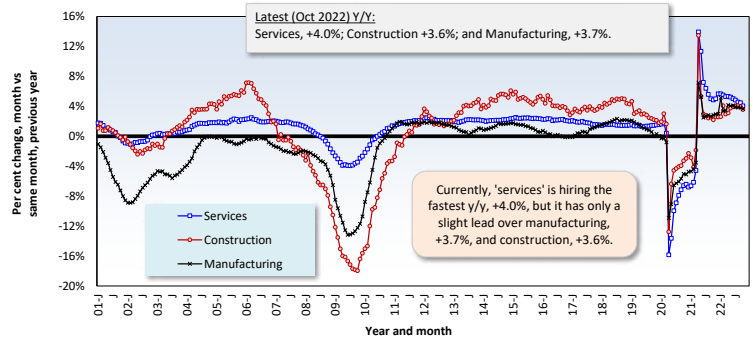


The not seasonally adjusted (NSA) unemployment rate for construction is presently 4.1%. In April 2020, at its worst, it was 16.6%. Manufacturing's current NSA jobless rate is 3.1%. April 2020's extreme was 13.2%. In early 2000, the ratio of construction to manufacturing jobs was 0.4 to 1.0. Now, it's 0.6 to 1.0.

Latest data points are for October, 2022.

Source: Payroll Survey, U.S. Bureau of Labor Statistics (BLS) / Chart: ConstructConnect-CanaData.

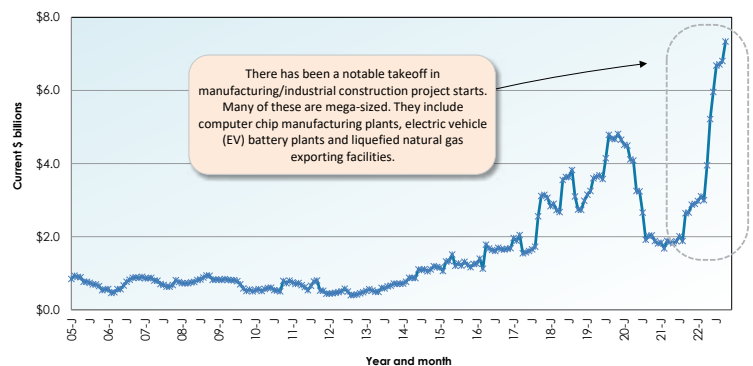
GRAPH 4: U.S. EMPLOYMENT OCTOBER 2022 — % CHANGE Y/Y BASED ON SEASONALLY ADJUSTED (SA) DATA



The latest data points are for October, 2022.

Data source: Payroll Survey, Bureau of Labor Statistics (U.S. Department of Labor)/Chart: ConstructConnect.

GRAPH 6: U.S. MANUFACTURING/INDUSTRIAL CONSTRUCTION STARTS — CONSTRUCTCONNECT



There has been a notable takeoff in manufacturing/industrial construction project starts. Many of these are mega-sized. They include computer chip manufacturing plants, electric vehicle (EV) battery plants and liquefied natural gas exporting facilities.

The last data point is for October 2022.

Data source: ConstructConnect. Graph: ConstructConnect.

Continued from page 3

construction sectors are in the goods-producing segment of the economy (i.e., as opposed to services-producing) and there is considerable overlap between their labor pools.

In the latest month, the U.S. construction sector achieved the same year-over-year advance in number of employees as 'all jobs', +3.6%. The staffing increase by manufacturers was a tad speedier, +3.7% y/y. Private sector services employment rose at an even faster clip, +4.0% y/y. Among all services sub-sectors, 'leisure and hospitality' scored the greatest y/y pickup in jobs count, +7.9%, but that's after being scarred most severely by the coronavirus pandemic.

In other segments of the economy with close ties to construction, the latest y/y percentage changes in employment have been as follows: oil and gas exploration and development, +11.8%; architectural and engineering design services, +5.9%; machinery and equipment rental and leasing, +3.4%; real estate, +2.5%; cement and concrete product manufacturing, +2.4%; and building materials and supplies dealers, -2.1%. The latter is being influenced by a tailing off in residential new and reno activity, coincident with rapidly climbing mortgage rates.

Design services work at architectural and engineering firms leads into later onsite activity. Therefore, the +5.9% jobs jump for the industry is a positive sign concerning future in-the-field and mainly nonresidential employment. Offering lukewarm support is the Architecture Billings Index (ABI) from the American Institute of Architects (AIA). The ABI in September, at 51.7, stayed above its key 50.0 benchmark, but it was down from August's 53.3 figure. (For the ABI, above or below 50.0 is the demarcation point that separates more from fewer sales month to month.) The AIA's New Project Inquiries index also retreated in the latest month, to 53.6.

Pluses and Minuses among Type of Structure Sub-categories

The -8.2% month-to-month (m/m) change in October's total nonresidential starts resulted from declines in nearly all the major type of structure sub-categories. Industrial was -21.5%; engineering, -11.7%; and commercial, -8.4%. Only institutional showed improvement, +13.9%.

The +42.2% gain in total nonresidential starts in October of this year versus October of last year (y/y) was thanks to big pickups in industrial (+188.6%), institutional (+54.4%) and engineering (+34.6%). Only commercial took a step backwards (-7.2%).

October's +30.8% year-to-date (ytd) advance in total nonresidential starts garnered support from all points along the type-of-structure spectrum, led by industrial, +177.0%, and followed by engineering, +24.2%; institutional, +16.8%; and commercial, +7.6%.

There are two dominant sub-categories of total nonresidential starts. When the volumes of 'roads/highways' and 'schools/colleges' are added together, they accounted for 29.3% of October's total nonresidential starts ytd (i.e., shares of 15.9% and 13.4% respectively).

The three percentage-change metrics for street starts in October 2022 were -30.0% m/m, but +14.9% y/y, and +26.2% ytd. For educational facility starts, the results were all commendable: +13.6% m/m, +54.7% y/y and +19.2% ytd. At the various levels of education, 'pre-school and elementary work' have accounted for the biggest uptick in starts year to date, +34.1%.

Important beyond roads within the engineering sub-category are 'water/sewage' and 'bridge' starts. The results for the former in October were +8.1% m/m; +56.2% y/y; and +27.4% ytd. For the latter, a -19.8% performance m/m lost its sting next to surges of +68.6% y/y and +59.5% ytd.

Important beyond schools in institutional are three medical sub-categories - i.e., 'hospitals/clinics', 'nursing/assisted living' and 'miscellaneous medical'. Their combined starts in October 2022 were +26.3% m/m, +51.7% y/y, and +14.2% ytd. On their own, 'hospital/clinic' starts in the latest month were +319.1% m/m, +151.1% y/y, and +27.0% ytd (see Top 10 projects, page 8).

Also showing good results within institutional so far this

TABLE 2: CONSTRUCTION STARTS IN SOME ADDITIONAL TYPE OF STRUCTURE SUB-CATEGORIES — ConstructConnect®

	Jan-Oct 2022 (\$ billions)	% Change vs Jan-Oct 2021
Sports Stadiums/Convention Centers	\$5.141	-6.4%
Transportation Terminals	\$5.398	-6.2%
Courthouses	\$1.557	-20.5%
Police Stations & Fire Halls	\$3.676	45.9%
Prisons	\$2.128	10.3%
Pre-School/Elementary	\$19.172	34.1%
Junior & Senior High Schools	\$25.939	8.6%
K-12 (sum of above two categories)	\$45.111	18.1%
Special & Vocational Schools	\$2.020	24.3%
Colleges & Universities	\$15.663	21.8%
Electric Power Infrastructure	\$7.471	-15.0%

Source: ConstructConnect/Table: ConstructConnect.

**GRAPH 7: U.S. CONSTRUCTION JOB OPENINGS (FROM JOLTS REPORT)
(3-MONTH MOVING AVERAGES PLACED IN LATEST MONTH)**

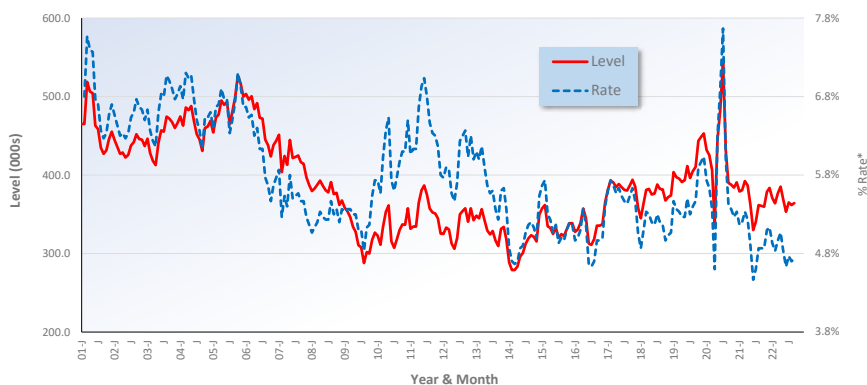


Interest rates may be climbing, but so far that's had little impact on job openings, both as a level and rate, in the construction sector. Both data series recorded upticks in Sept and were historically high.

*Rate is number of job openings end-of-month as % of 'construction employment plus number of job openings'. Latest seasonally adjusted data points are for September 2022. ... JOLTS = Job Openings and Labor Turnover Survey.

Data source: Bureau of Labor Statistics (Dept of Labor)/Chart: ConstructConnect.

**GRAPH 8: U.S. CONSTRUCTION JOB HIRES (FROM JOLTS REPORT)
(3-MONTH MOVING AVERAGES PLACED IN LATEST MONTH)**



Openings in the construction sector are elevated but efforts to sign on new workers (i.e., 'hires') have been frustratingly unsuccessful. The 'rate' of hires is particularly disappointing, almost at a record low.

*Rate is number of hires during month as % of construction employment.

Latest seasonally adjusted data points are for September 2022. ... JOLTS = Job Openings and Labor Turnover Survey.

Data source: Bureau of Labor Statistics (Dept of Labor)/Chart: ConstructConnect.

Continued on page 5

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year have been the 'police station/fire hall' (+45.9% ytd) and 'military' (+22.4% ytd) sub-categories of starts.

Among commercial starts in October, laboratories (+93.7%) led the ytd charge, with 'hotels/motels' (+39.7%), 'government office buildings' (+12.1%), 'amusement' (+11.1%), and 'retail/shopping' (+9.0%) in tow. Interestingly, 'private office buildings' and 'warehouses' have fought back from significant weakness earlier this year to now reside on nearly level planes, +1.1% and -1.1% respectively, both ytd.

Finally, there are industrial starts, which faltered m/m in October (-21.5%) but were outstanding y/y (+188.6%) and ytd (+177.0%). While the latest month featured a couple of huge industrial project startups, their combined dollar volume fell short of what was commissioned in manufacturing last month. September included a \$9 billion chipmaking facility for Samsung in Texas.

Slopes of Trend Lines Rising More Often than Not

Page 9 of this Industry Snapshot sets out the history, January 2005 to the present, of 12-month moving 'starts' averages (derived from ConstructConnect's database) for a dozen construction types-of-structure. The moving-average approach is designed to capture trends. (As a technical note, the moving average is graphed in the ending month.)

During 2022, the 'nonresidential building' and 'heavy engineering' curves have both been moving higher in solid fashion. 'Institutional' is now trending upwards more clearly than 'commercial'.

Looking further into sub-categories, 'schools/colleges', 'hospitals/clinics', 'roads/highways', 'water/sewage' and 'bridges' all have starts trend lines that are rising. 'Private office buildings' and 'miscellaneous civil' are stepping sideways.

JOLTS Results Reveal Labor Supply Solution Elusive

For ease of viewing, Graphs 7 and 8 show 'smoothed' curves (i.e., based on three-month moving averages, placed in the latest month) for the Job Openings and Labor Turnover Survey (JOLTS) results pertaining to construction industry 'openings' and 'hires'.

For the construction sector, the JOLTS story remains frustrating. There are multiple openings, but there's been only limited success in filling positions. One might suppose that sizable wage hikes would supply a solution. But construction worker earnings have lifted off (see next section) and there hasn't been much of an impact on sign-ups. The industry will need to become more assertive in promoting other incentives, appealing to a wider potential-employee base, and dreaming up ways to adopt more automation or make switch overs to modular.

Construction Wage Rally Continues

Tables B-3 and B-8 of the monthly *Employment Situation* report, from the BLS, record average hourly and average weekly wages for industry sectors. B-3 is for all employees (i.e., including bosses) on non-farm payrolls. B-8 is for 'production and non-supervisory personnel' only (i.e., it excludes bosses). For 'all jobs' and construction, there are eight percentage changes to follow.

From October 2022's Table B-3 (including bosses), y/y all-jobs earnings were +4.7% hourly and +3.8% weekly. Construction workers, as a subset of 'all jobs', did better on both counts, +5.6% hourly and +5.8% weekly. From Table B-8 for production and non-supervisory workers (i.e.,

GRAPH 9: AVERAGE HOURLY EARNINGS Y/Y — 'ALL JOBS' & CONSTRUCTION



The y/y advances in hourly wages are still quite high, but they're not keeping up with the latest inflation reading (+8.2% y/y). The average annual increase for 'construction workers' from 2010 to 2019 was +2.3%; for 'all jobs' over the same period, +2.4%.

From 'Production Workers and Non-supervisory Personnel' Table (B8).

The latest data points are for October, 2022.

Data Source: Bureau of Labor Statistics (BLS)'s Employment Situation report/Chart: ConstructConnect.

GRAPH 10: AVERAGE WEEKLY EARNINGS Y/Y — 'ALL JOBS' & CONSTRUCTION



The y/y climb in weekly wages paid to construction workers soared in Feb 2022, +10.6%. Only modest moderation has occurred since then. Presently, the NSA unemployment rate in construction (4.1%) is higher than the 'all jobs' rate (3.4%).

From 'Production Workers and Non-supervisory Personnel' Table (B8).

The latest data points are for October, 2022.

Data Source: Bureau of Labor Statistics (BLS)'s Employment Situation report/Chart: ConstructConnect.

excluding bosses), the y/y all-jobs pay-check advances were +5.5% hourly and +4.8% weekly. Again, construction workers were rewarded more richly, +6.6% hourly and +7.1% weekly.

Material Cost Increases No Longer as Frightening

October 2022's y/y results for three building related BLS Producer Price Index (PPI) series were: (A) 'construction materials special index', +2.9% (decelerating from September's +5.9%); (B) 'inputs to new construction index, excluding capital investment, labor, and imports', +10.1% (retreating from +11.2% in the previous month); and (C) 'final demand construction', designed to capture bid prices, +19.6% (easing from the +23.2% change in the period prior).

(A) comes from a data series with a long history, but it's confined to a limited number of major construction materials. (B) has a shorter history, but it's more comprehensive in its coverage, although it includes some items (e.g.,

transportation) that aren't strictly materials.

Concerning the y/y cost of some major construction material inputs, as revealed in the PPI data set for October 2022 from the BLS, the y/y increases have lost some of their power to frighten. Diesel fuel is still cringe-worthy at +61.5%, but asphalt has slowed to +20.4% (it was +80% in May). Gypsum is now +16.2%; cement, +13.4%; ready-mix concrete, +11.8%; hot rolled steel bars, plates, and structural shapes, +9.8%; softwood lumber, +4.4%; aluminum mill shapes, -9.3%; and copper wire and cable, -11.1%. There's an 'inputs to highways and streets' PPI index and it's +11.8% y/y.

The value of construction starts each month is derived from ConstructConnect's database of all active construction projects in the U.S. Missing project values are estimated with the help of RSMeans' building cost models. ConstructConnect's non-residential construction starts series, because it is comprised of total-value estimates for individual projects, some of which are super-large, has a history of being more volatile than many other leading indicators for the economy.

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October 2022's 'Grand Total' Starts +16.9% Ytd

From Table 6 on page 7 (also Table 9 on page 11) of this report, ConstructConnect's total residential starts in October 2022 were +12.3% m/m, -0.9% y/y, and +0.4% ytd. Multi-family starts were +32.5% m/m, +45.5% y/y and +22.6% ytd. Single-family starts were +0.6% m/m, but -20.2% y/y and -8.3% ytd.

Including home building with all nonresidential categories, **Grand Total** starts in October 2022 were -1.3% m/m, but +21.8% y/y and +16.9% ytd.

ConstructConnect adopts a research-assigned 'start' date. In concept, a 'start' is equivalent to ground being broken for a project to proceed. If work is abandoned or re-bid, the 'start' date is revised to reflect the new information.

The Data Signaling Construction Opportunities in 2023

My recent posts have largely centered on the concerns facing the industry, with multiple warnings about which segments are most likely to be negatively impacted by current financial market conditions. For November, I will break with this trend and focus on those segments which are expected to do well over the coming 12 months.

The climbing cost of mortgage payments due to rising loan rates has strongly sapped demand for single-family construction in the second half of 2022, as evidenced by the recent and dramatic decline in permits. Meanwhile, multi-family construction, a more affordable alternative to single-family homes, continues to report steady permitting levels. Construction leaders studying the residential space in 2023 will do well to monitor the multi-family market separately from the single-family market and think critically when interpreting total residential statistics.

In the nonresidential capital spending arena, ConstructConnect's Expansion Index offers powerful, forward-looking construction activity information by verticals for both the U.S. and Canada. From this data set, it is possible to glean insights about how the construction industry is transforming in light of macroeconomic changes.

In both countries, recent total planned construction spending data is signaling slowing prospects in the civil and commercial verticals. Conversely, those verticals with the greatest increases in planned project spending at the end of October included the industrial, community, and government verticals. Please see the next section for additional information on the Expansion Index and how it can be freely accessed by clicking on the link provided.

Michael Guckes, Senior Economist

Expansion Index Monitors Construction Prospects

A rule of thumb is that nonresidential construction is a lagging indicator among economic measures. Companies are hesitant to undertake capital spending until their personnel needs are rapidly expanding and their office square footage or plant footprints are straining capacity. Plus, it helps if profits are abundant. Also, today's greater tendency to work from home has made office occupancy and the resulting need for construction much more difficult to assess. The 'rule', however, may not hold true under the present circumstances, with the weakness in such areas as retail spending to be offset by a rich deposit of large industrial and engineering construction projects to mine.

Each month, ConstructConnect publishes information on upcoming construction projects at its Expansion Index web location, to be found by clicking on this link, <https://www.construct-connect.com/expansion-index>

The Expansion Index, for hundreds of cities in the U.S. and Canada, calculates the ratio, based on dollar volume, of projects in the planning stage, at present, divided by the comparable figure a year ago. The ratio moves above 1.0 when there is currently a larger dollar volume of construction 'prospects' than there was last year at the same time. The ratio sinks below 1.0 when the opposite is the case. The results are set out in interactive maps for both countries.

TABLE 3: 2022 YTD RANKING OF TOP 20 STATES BY \$ VOLUME OF NONRESIDENTIAL CONSTRUCTION STARTS — ConstructConnect®

	Jan-Oct 2022	% Change vs Jan-Oct 2021
1 Texas	\$83,121,734,378	95.3%
2 California	\$34,238,222,063	5.3%
3 New York	\$24,685,175,138	35.4%
4 Florida	\$22,740,957,879	4.8%
5 North Carolina	\$18,106,089,234	39.9%
6 Michigan	\$17,573,718,800	110.6%
7 Georgia	\$16,910,249,383	73.5%
8 Louisiana	\$16,283,961,870	172.9%
9 Illinois	\$14,292,856,382	20.6%
10 Pennsylvania	\$13,785,524,835	16.1%
11 Massachusetts	\$11,346,318,743	13.0%
12 Indiana	\$11,128,375,375	43.9%
13 Kentucky	\$10,870,089,430	185.0%
14 Ohio	\$10,423,465,373	-19.5%
15 Virginia	\$9,685,838,939	13.1%
16 Wisconsin	\$8,799,868,721	23.3%
17 Washington	\$8,754,946,923	20.3%
18 Missouri	\$7,952,257,116	2.6%
19 New Jersey	\$7,941,330,482	22.7%
20 Arizona	\$7,868,022,487	-48.5%

Figures are comprised of non-res building & engineering (residential is omitted).

TABLE 4: 2022 YTD RANKING OF TOP 20 STATES BY \$ VOLUME OF NONRESIDENTIAL BUILDING CONSTRUCTION STARTS — ConstructConnect®

	Jan-Oct 2022	% Change vs Jan-Oct 2021
1 Texas	\$59,553,380,092	135.6%
2 California	\$20,752,480,950	3.6%
3 Florida	\$14,788,300,094	2.2%
4 New York	\$14,650,791,201	27.5%
5 Georgia	\$13,621,512,365	111.4%
6 Louisiana	\$13,069,500,201	238.9%
7 Michigan	\$12,628,916,461	198.3%
8 North Carolina	\$12,333,583,435	23.8%
9 Kentucky	\$9,002,599,528	300.4%
10 Massachusetts	\$8,711,052,668	77.9%
11 Pennsylvania	\$8,242,825,514	0.9%
12 Indiana	\$6,777,358,783	43.9%
13 Illinois	\$6,713,226,201	7.1%
14 Virginia	\$5,735,203,240	-3.1%
15 Ohio	\$5,707,910,751	-32.5%
16 Arizona	\$5,608,129,725	-60.3%
17 Wisconsin	\$5,334,086,849	45.8%
18 Washington	\$4,903,659,864	5.4%
19 Missouri	\$4,802,786,073	-11.0%
20 South Carolina	\$4,601,956,988	46.2%

TABLE 5: 2022 YTD RANKING OF TOP 20 STATES BY \$ VOLUME OF HEAVY ENGINEERING/CIVIL CONSTRUCTION STARTS — ConstructConnect®

	Jan-Oct 2022	% Change vs Jan-Oct 2021
1 Texas	\$23,568,354,286	36.4%
2 California	\$13,485,741,113	8.1%
3 New York	\$10,034,383,937	48.7%
4 Florida	\$7,952,657,785	10.1%
5 Illinois	\$7,579,630,181	35.7%
6 North Carolina	\$5,772,505,799	93.7%
7 Pennsylvania	\$5,542,699,321	49.7%
8 Michigan	\$4,944,802,339	20.2%
9 Ohio	\$4,715,554,622	4.9%
10 Minnesota	\$4,611,634,553	-23.8%
11 New Jersey	\$4,410,528,793	57.1%
12 Indiana	\$4,351,016,592	43.9%
13 Virginia	\$3,950,635,699	49.3%
14 Washington	\$3,851,287,059	46.6%
15 Wisconsin	\$3,465,781,872	-0.4%
16 Georgia	\$3,288,737,018	-0.5%
17 Louisiana	\$3,214,461,669	52.3%
18 Missouri	\$3,149,471,043	33.9%
19 Colorado	\$2,977,630,692	24.4%
20 Tennessee	\$2,732,513,579	25.6%

Data source and Tables: ConstructConnect.

Alex Carrick is Chief Economist for ConstructConnect. He has delivered presentations throughout North America on the U.S., Canadian and world construction outlooks. Mr. Carrick has been with the company since 1985. Links to his numerous articles are featured on [Twitter @ConstructConnx](#), which has 50,000 followers.

INSIGHT view of starts statistics

TABLE 6: VALUE OF UNITED STATES CONSTRUCTION STARTS
ConstructConnect® INSIGHT VERSION — OCTOBER 2022
ARRANGED TO MATCH THE ALPHABETICAL CATEGORY DROP-DOWN MENUS IN INSIGHT

	Jan-Oct 2022 (\$ billions)	% Change Jan-Oct 22 vs Jan-Oct 21	% Change Oct 22 vs Oct 21	% Change Oct 22 vs Sept 22
Summary				
CIVIL	168.476	24.2%	34.6%	-11.7%
NONRESIDENTIAL BUILDING	298.824	34.9%	46.3%	-6.4%
RESIDENTIAL	303.911	0.4%	-0.9%	12.3%
GRAND TOTAL	771.211	16.9%	21.8%	-1.3%
Verticals				
Airport	6.544	39.5%	28.2%	-53.6%
All Other Civil	11.182	-11.0%	62.6%	35.5%
Bridges	24.622	59.5%	68.6%	-19.8%
Dams / Canals / Marine Work	7.280	18.4%	4.3%	17.1%
Power Infrastructure	7.471	-15.0%	48.1%	564.3%
Roads	74.492	26.2%	14.9%	-30.0%
Water and Sewage Treatment	36.884	27.4%	56.2%	8.1%
CIVIL	168.476	24.2%	34.6%	-11.7%
Offices (private)	16.856	1.1%	112.1%	45.2%
Parking Garages	1.874	19.2%	-64.3%	-84.4%
Transportation Terminals	5.398	-6.2%	-76.6%	-60.3%
Commercial (small subset)	24.129	0.6%	-9.0%	-8.6%
Amusement	6.399	11.1%	34.0%	1.2%
Libraries / Museums	3.081	1.9%	288.8%	27.4%
Religious	0.830	-22.2%	-49.2%	53.5%
Sports Arenas / Convention Centers	5.141	-6.4%	-68.7%	147.1%
Community	15.451	0.7%	-29.0%	34.6%
College / University	15.663	21.8%	8.3%	9.9%
Elementary / Pre School	19.172	34.1%	102.0%	-11.0%
Jr / Sr High School	25.939	8.6%	53.1%	16.8%
Special / Vocational	2.020	24.3%	369.0%	285.7%
Educational	62.793	19.2%	54.7%	13.6%
Courthouses	1.557	-20.5%	72.0%	23.5%
Fire and Police Stations	3.676	45.9%	64.9%	-10.8%
Government Offices	11.284	12.1%	63.9%	-1.5%
Prisons	2.128	10.3%	56.5%	49.9%
Government	18.646	13.2%	64.0%	3.5%
Industrial Labs / Labs / School Labs	3.783	93.7%	22.0%	-58.2%
Manufacturing	83.355	177.0%	188.6%	-21.5%
Warehouses	23.573	-1.1%	-6.2%	-22.3%
Industrial	110.711	98.1%	106.7%	-23.0%
Hospitals / Clinics	19.270	27.0%	151.1%	319.1%
Medical Misc.	7.832	26.3%	-38.3%	-82.2%
Nursing Homes	3.530	-35.1%	-53.5%	42.8%
Medical	30.632	14.2%	51.7%	26.3%
Military	8.909	22.4%	49.4%	-10.3%
Hotels	8.828	39.7%	13.5%	57.0%
Retail Misc.	6.262	16.9%	-0.7%	-27.1%
Shopping	12.463	9.0%	0.0%	-22.4%
Retail	27.553	19.3%	4.2%	-7.0%
NONRESIDENTIAL BUILDING	298.824	34.9%	46.3%	-6.4%
Multi-Family	104.734	22.6%	45.5%	32.5%
Single-Family	199.177	-8.3%	-20.2%	0.6%
RESIDENTIAL	303.911	0.4%	-0.9%	12.3%
NONRESIDENTIAL	467.300	30.8%	42.2%	-8.2%
GRAND TOTAL	771.211	16.9%	21.8%	-1.3%

Table 1 conforms to the type-of-structure ordering adopted by many firms and organizations in the industry. Specifically, it breaks nonresidential building into ICI work (i.e., industrial, commercial and institutional), since each has its own set of economic and demographic drivers.

Table 6 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: ConstructConnect/Table: ConstructConnect.

“Top Ten” projects of the month

TABLE 7: ConstructConnect’s TOP 10 PROJECT STARTS IN OCTOBER 2022

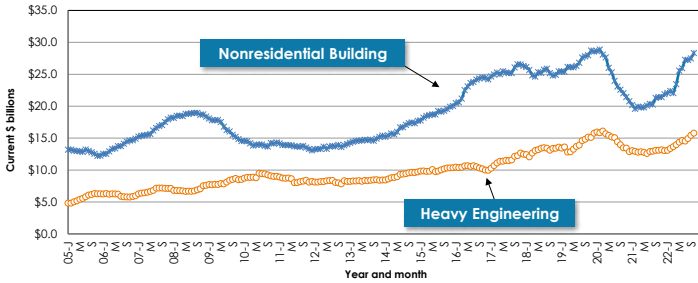
LOCATION (EAST TO WEST)	TYPE OF CONSTRUCTION	DESCRIPTION	SQUARE FEET 000S*	DOLLARS 000,000S
Massachusetts Boston	Institutional	Massachusetts General Hospital / Clinical and Campus Services Building (5 structures; 14 stories; 482 beds) 555 Fruit St Leggat McCall Properties LLC	1,050	\$1,900
New York Yonkers	Residential	Hudson Piers (2 structures; 1395 units) Alexander St Extell Development Co.	2,000	\$585
Georgia Ellabell (Savannah)	Industrial	Hyundai Motors Electric Vehicle And Battery Manufacturing Plant (11 buildings) (1 structure) Bryan County Hyundai Motor America	14,000	\$5,500
Florida Davie	Residential	The Academical Village - Nova Southeastern University (3 structures; 825 units) SW 36th St & S University Dr The Brandon Company	2,500	\$500
Apopka	Residential	Floridian Town Center (6 structures; 900 units) 429 Connector Rd Benge Development	1,000	\$500
Kansas Dodge City	Industrial	Hilmar Cheese Processing Plant (1 structure; 1 story) Ford County Hilmar Cheese Company	1,000	\$600
Texas Beaumont	Industrial	OCI Beaumont Blue Ammonia Facility (1 structure) Jefferson County OCI Beaumont LLC	100	\$2,000
Austin	Residential	Project Waterline (8 structures; 74 stories; 603 units) 98 Red River St Lincoln Property Company (LPC Southwest) - Austin Office	2,000	\$520
Idaho Kuna	Commercial	Project Peregrine - FaceBook / Meta Data Center / Kuna (1 structure) 6990 W Kuna Mora Rd Facebook / Meta	960	\$800
Hawaii Honolulu	Residential	The Park Ward Village Mixed-Use (2 structures; 41 stories; 546 units) Auahi St & Ward Ave Howard Hughes Corp - Ward Village	2,000	\$620
TOTALS:			26,610	\$13,525

*A square footage measure does not apply for alteration, some forms of industrial (e.g., petrochemical) and most engineering/civil work.

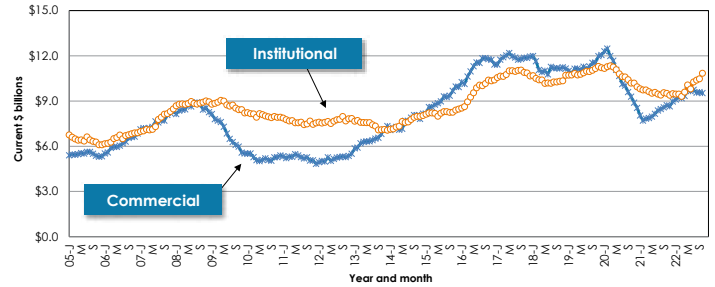
Source: ConstructConnect/Table: ConstructConnect.

Trend graphs for 12 key categories

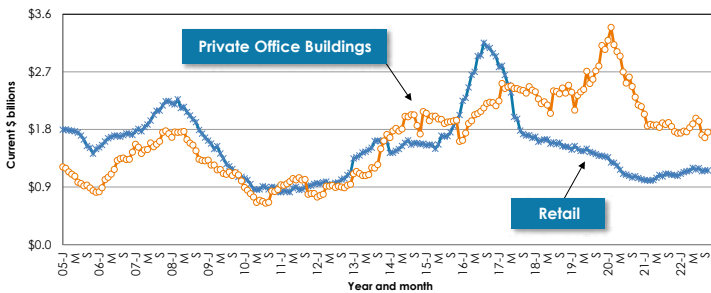
GRAPH 11: U.S. NONRESIDENTIAL CONSTRUCTION STARTS — ConstructConnect® (12-MONTH MOVING AVERAGES)



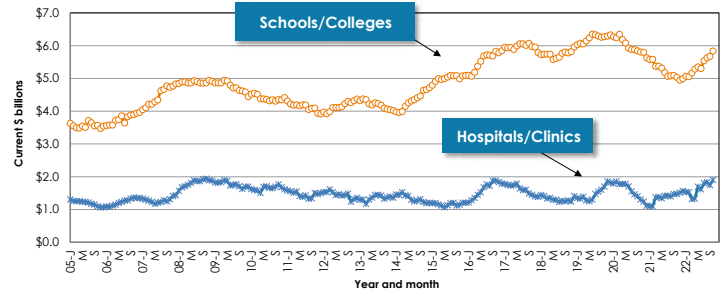
GRAPH 12: U.S. COMMERCIAL AND INSTITUTIONAL CONSTRUCTION STARTS — ConstructConnect® (12-MONTH MOVING AVERAGES)



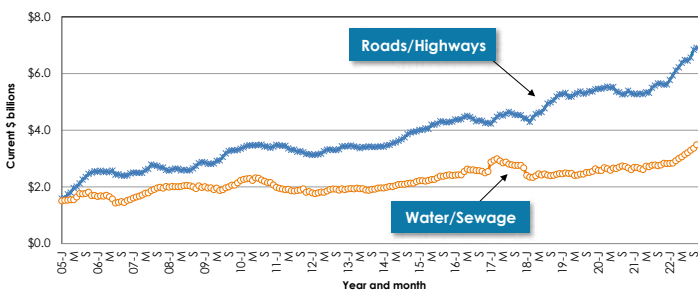
GRAPH 13: U.S. RETAIL AND PRIVATE OFFICE BUILDING CONSTRUCTION STARTS — ConstructConnect® (12-MONTH MOVING AVERAGES)



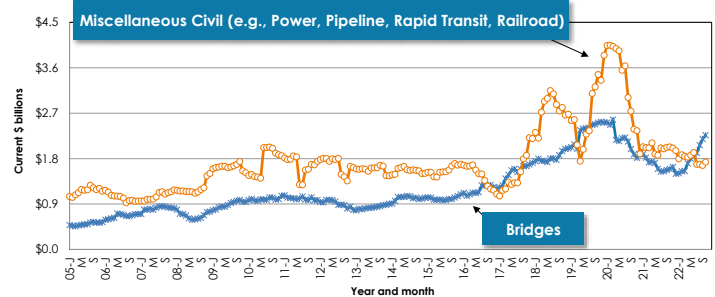
GRAPH 14: U.S. HOSPITAL/CLINIC AND SCHOOL/COLLEGE CONSTRUCTION STARTS — ConstructConnect® (12-MONTH MOVING AVERAGES)



GRAPH 15: U.S. ROAD/HIGHWAY AND WATER/SEWAGE CONSTRUCTION STARTS — ConstructConnect® (12-MONTH MOVING AVERAGES)



GRAPH 16: U.S. BRIDGES AND MISCELLANEOUS CIVIL CONSTRUCTION STARTS — ConstructConnect® (12-MONTH MOVING AVERAGES)



The last data points in all the graphs on this page are for October, 2022.

Source: ConstructConnect/Charts: ConstructConnect.

Regional starts table

TABLE 8: U.S. YEAR-TO-DATE REGIONAL STARTS, NONRESIDENTIAL CONSTRUCTION* — ConstructConnect®

	Jan-Oct 2021	Jan-Oct 2022	% Change
Connecticut	\$2,348,845,051	\$2,616,715,305	11.4%
Maine	\$2,771,007,952	\$3,114,692,007	12.4%
Massachusetts	\$10,037,685,046	\$11,346,318,743	13.0%
New Hampshire	\$1,325,574,622	\$765,742,930	-42.2%
Rhode Island	\$1,190,080,263	\$1,125,050,379	-5.5%
Vermont	\$330,739,227	\$492,342,530	48.9%
Total New England	\$18,003,932,161	\$19,460,861,894	8.1%
New Jersey	\$6,473,340,848	\$7,941,330,482	22.7%
New York	\$18,237,766,762	\$24,685,175,138	35.4%
Pennsylvania	\$11,875,434,421	\$13,785,524,835	16.1%
Total Middle Atlantic	\$36,586,542,031	\$46,412,030,455	26.9%
TOTAL NORTHEAST	\$54,590,474,192	\$65,872,892,349	20.7%
Illinois	\$11,855,087,893	\$14,292,856,382	20.6%
Indiana	\$7,733,274,637	\$11,128,375,375	43.9%
Michigan	\$8,346,373,624	\$17,573,718,800	110.6%
Ohio	\$12,946,633,767	\$10,423,465,373	-19.5%
Wisconsin	\$7,137,198,117	\$8,799,868,721	23.3%
Total East North Central	\$48,018,568,038	\$62,218,284,651	29.6%
Iowa	\$4,627,492,949	\$4,679,601,013	1.1%
Kansas	\$3,359,017,830	\$4,571,663,494	36.1%
Minnesota	\$9,263,162,613	\$7,834,506,969	-15.4%
Missouri	\$7,747,008,612	\$7,952,257,116	2.6%
Nebraska	\$3,360,503,103	\$5,233,381,844	55.7%
North Dakota	\$1,998,159,769	\$3,834,154,482	91.9%
South Dakota	\$1,482,687,843	\$3,015,435,697	103.4%
Total West North Central	\$31,838,032,719	\$37,121,000,615	16.6%
TOTAL MIDWEST	\$79,856,600,757	\$99,339,285,266	24.4%
Delaware	\$1,007,192,015	\$1,493,949,288	48.3%
District of Columbia	\$1,004,454,414	\$1,956,859,067	94.8%
Florida	\$21,697,808,520	\$22,740,957,879	4.8%
Georgia	\$9,747,263,628	\$16,910,249,383	73.5%
Maryland	\$5,179,381,304	\$5,944,220,941	14.8%
North Carolina	\$12,946,507,144	\$18,106,089,234	39.9%
South Carolina	\$4,438,182,204	\$6,991,294,984	57.5%
Virginia	\$8,565,375,576	\$9,685,838,939	13.1%
West Virginia	\$1,033,531,650	\$1,721,125,552	66.5%
Total South Atlantic	\$65,619,696,455	\$85,550,585,267	30.4%
Alabama	\$5,688,781,744	\$5,813,344,142	2.2%
Kentucky	\$3,814,074,468	\$10,870,089,430	185.0%
Mississippi	\$2,281,175,864	\$2,746,845,707	20.4%
Tennessee	\$8,567,801,779	\$7,318,660,358	-14.6%
Total East South Central	\$20,351,833,855	\$26,748,939,637	31.4%
Arkansas	\$2,649,725,722	\$2,797,000,188	5.6%
Louisiana	\$5,966,757,778	\$16,283,961,870	172.9%
Oklahoma	\$3,739,683,802	\$5,302,092,870	41.8%
Texas	\$42,551,366,234	\$83,121,734,378	95.3%
Total West South Central	\$54,907,533,536	\$107,504,789,306	95.8%
TOTAL SOUTH	\$140,879,063,846	\$219,804,314,210	56.0%
Arizona	\$15,273,464,956	\$7,868,022,487	-48.5%
Colorado	\$6,462,808,995	\$5,786,719,416	-10.5%
Idaho	\$1,037,749,125	\$2,795,355,968	169.4%
Montana	\$977,423,580	\$1,567,747,503	60.4%
Nevada	\$3,515,644,468	\$4,688,554,818	33.4%
New Mexico	\$1,618,668,208	\$2,698,759,194	66.7%
Utah	\$4,541,202,819	\$4,730,881,032	4.2%
Wyoming	\$923,638,134	\$1,213,303,441	31.4%
Total Mountain	\$34,350,600,285	\$31,349,343,859	-8.7%
Alaska	\$1,168,022,952	\$1,616,424,178	38.4%
California	\$32,509,220,671	\$34,238,222,063	5.3%
Hawaii	\$1,870,733,151	\$1,523,870,039	-18.5%
Oregon	\$4,695,484,111	\$4,800,550,923	2.2%
Washington	\$7,279,976,841	\$8,754,946,923	20.3%
Total Pacific	\$47,523,437,726	\$50,934,014,126	7.2%
TOTAL WEST	\$81,874,038,011	\$82,283,357,985	0.5%
TOTAL U.S.	\$357,200,176,806	\$467,299,849,810	30.8%

*Figures above are comprised of non-res building and engineering (i.e., residential is omitted).

Source: ConstructConnect/Table: ConstructConnect.

