

VTS Green Shoots Report

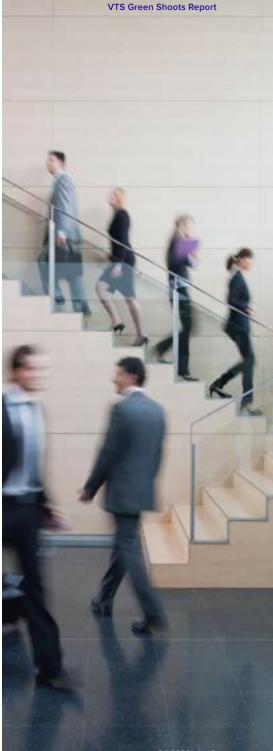
Quarterly Report: Q4 2022

Office Market Overview

Financial markets had a volatile Q4 '22 as all three of the major indices (S&P 500, DJIA & NASDAQ) were up in both Oct. '22 and Nov. '22, yet had steep declines in Dec. '22. The DJIA (+15.4%) and the S&P 500 (+7.1%) were up in Q4 '22 vs the prior quarter, bucking the trend of three consecutive down quarters. On the other hand, the NASDAQ had its fourth consecutive declining quarter (-1.0%) and was hit the hardest in Dec. '22 (-8.7%), not a good indicator for markets that are more dependent on demand from TAMI (Technology, Advertising, Media, & Information) tenants.^[1]

In 2022, the NASDAQ dropped 33.1% while the DJIA declined by only 8.8% and the S&P 500 dropped by 19.4%. A highly correlated VTS metric for stock market movements is the count of new office tenants entering the market. The requirements for Tech and Creative/Finance/Healthcare declined by 33.5% and 19.0% in H2 '22 vs H1 '22, respectively.^[1] TAMI tenants' market share of new requirements (% of total sf) from 2021-22 was down in all of the top eight markets vs pre-COVID levels. Seattle (47% pre- vs 28% post-COVID) and New York City (35% pre- vs 21% post-COVID) have had the steepest TAMI share declines since COVID. Each of the other major industries had at least one market share gain in a top eight market since COVID.

The VTS Office Demand Index (VODI) recently declined QoQ by four index points (-8.0%) to 46 in Dec. '22 from 50 in Sep. '22 and down by 13 points YoY from 59 in Dec. '21 across the top seven markets (excludes energy-centric Houston market). A seasonal Dec. slowdown is partially to blame, yet the VODI last dropped this low back in Feb. '21. The national VODI average for 2022 was 57, down YoY by 10 index points (-14.9%) from an average VODI of 67 in 2021 and down 43% compared to the 2018-'19 pre-COVID average. Thus, this softening in new demand requirements nationally points to a clear and suboptimal drop in H1 '23 expected for office leasing activity nationally. In '22, San Francisco (-62%) and Boston (-59%) experienced the steepest drop in new demand SF velocity, whereas Los Angeles (-34%) and New York City (-35%) had the lowest relative declines compared to respective pre-COVID levels.





Total Active Demand within the top 8 markets totaled over 63M sf as of the end of Q4 '22 with an average requirement size of 17.5k sf. This active demand pool reflects a QoQ decline of 11.2%. Based on over 9K lease proposals in 2022 for Trophy & Class A assets (1k+ sf and 36 mo+ terms) across 8 markets over the T6M ending Dec. '22, average starting rents (-0.5%) at \$61/sf and NERs (-0.6%) at \$53/sf both declined ever so slightly vs the prior T6M ending Jun. '22.

The incremental rate decline (-0.55%) in NERs vs starting rents over the two six-month periods was mostly attributable to an unfavorable increase (+2.6%) in the average Tenant Improvements (TI) to \$10.90/sf/yr, and an increase (+1.9%) to 8.0 average months of Free Rent. A good portion of this increase in TIs is attributable to an increase in the average term of lease proposals tracked over the T6M, which was 8.1 years, a moderate increase (+1.4%) over the prior T6M and in line (-0.5%) with the pre-COVID (2018-'19) average. This silver lining shows that existing tenants leasing and trading paper are growing increasingly comfortable with securing current rental rates for longer terms.



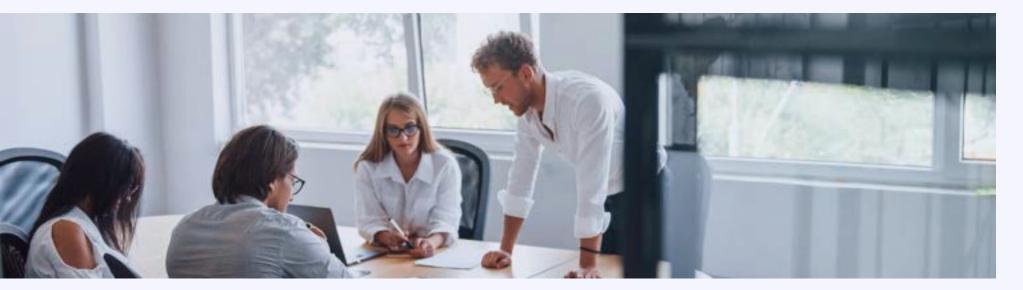
Trends

Despite a seasonally appropriate yet steeper decline than desired in Dec. '22, we identified several emerging trends, green shoots, and indicators for specific submarkets and asset characteristics.

<u></u> ا	Flight to Quality (FtQ) Shows Two Paths Forward
	Path #1: Reversion to the Mean. Markets like DC and Boston have consistently seen slightly lower premiums in 2021/22 vs pre-COVID for average NERs of the top 10% of proposals compared to the remaining 90% of proposals. Again, these two markets have unique dynamics. Better locations are positioned for Life Sciences in Boston, and rate-sensitive government tenants keep the DC market in check. Boston has seen the bottom 90% of deals in '22 increase (+6.5%) while the top 10% NERs remained flat, causing an overall reversion to the mean
	Path #2: Widening Premiums. Other markets where the FtQ theme is alive and well as evidenced by the top 10% of NERs increasing from '18/'19 averages compared to '22 and active proposal averages, include New York City (+16.8%), Seattle (+6.9%) and Houston (+6.5%). New York City specifically, increased at year-end to a commanding 95% premium on the average NER of the top 10% of proposals (vs the average NER of the remaining 90% of proposals) compared to a 70% pre-pandemic premium and an 87% premium at Q2 '22 YTD.
	The dispersion of rents across varying asset quality is starting to take different paths from market-to-market. Some are reverting to the mean, while others are extending the premiums on the flight-to-quality. Being on top of these varying market dynamic shifts will create opportunities to make informed decisions and swiftly set strategies to capitalize on such market movements and disconnects.

ହ୍ୟ	Large Tenant Demand Stabilizes
	The declining count of large (50K+ sf) tenant requirements entering the office market may be bottoming out, down only 3% in Q4 '22 vs Q3 '22. On the other hand, small (<10k sf) and mid-size (10-50k sf) tenants entering the market were both down 16% QoQ albeit on a higher base and are still closer to pre-COVID levels compared to large tenant demand. This will be a key trend to watch in 2023 as a potential reversal in large tenant demand will be materially positive for overall office fundamentals.
- S	Rate Hikes Set Stage for Debt Opportunities & Recaps in 2023
	The Federal Reserve has increased the Federal Funds Rate as planned seven times in 2022. The last two rate hikes of +75 bps on 11/2 and +50 bps on 12/14 lifted the Fed Funds Rate to 4.25-4.50% at year-end, up from only 0.25% at the start of 2022. The pipeline of maturing loans with significantly lower rates than today's market interest rates is mounting. This fact, coupled with the strong headwinds from waning tenant demand and less favorable lease economics (except for Trophy assets), will drive down occupancy, cashflows, and appraisals, and in many instances, is and will continue to require borrowers to either bring additional equity to a refinancing, sell the asset, or risk foreclosure. Either way, the stage is set for increasing capital markets activity. More investors are raising and allocating rescue capital for mezzanine/ bridge financing and preferred equity investments. VTS Data facilitates market selection and sourcing efforts as well as deal-specific and quantifiable office demand and real-time rent insights to make informed buy/sell decisions and gain conviction with lenders, partners, or investment committees.

	WALTs by Submarket: Stability vs Downward Pressure
	Savvy investors are leveraging VTS supply data to both identify trends and quantify concentrations of long and short WALTs (weighted average lease term) by submarkets and asset characteristics to then target or avoid them. As of Q4 '22, Trophy and Class A assets had an average WALT of 4.4 years, whereas B and C assets had a WALT of 3.5 years or a 24% shorter term. Trophy and Class A products in a submarket like Hollywood/Mid-Wilshire (Los Angeles) have a WALT of 6.3 years where only 14% of its total inventory (by count of asset) has <3.0 years remaining will have fewer tenants/leases rolling, serving as a mitigant to additional space coming on line.
	Conversely, Class B and C offices in submarkets like the West Loop (Houston) and Financial District (San Francisco) currently have a WALT of only 2.6 years remaining. This will generate a good flow of expiring tenants coming online for a given landlord to pursue and can also serve as an ideal hunting ground for opportunistic investors eyeing high-yield debt and preferred equity opportunities.



Standout Statistics by Market

Market		VODI % Change	% Change of Logged Lease Proposals 2H '22 vs. 1H '22 ^{[2] [3]}						
	Trending	VTS Office Demand Index Dec. '22 / '21	Total Proposal Count ^[4]	Starting Gross Rent/sf/yr	NER/sf/yrt ^[5]	Tl's/sf/yr	Free Rent (mos)	Lease Term (mos)	
Boston	•	-18%	-15.9%	-0.7%	-2.0%	9.4%	7.8%	1.8%	
Chicago		-26%	-8.8%	1.4%	1.8%	3.7%	-2.5%	5.4%	
Houston	•	-18%	9.3%	1.9%	1.6%	8.9%	-3.5%	-5.1%	
Los Angeles	•	-31%	-40.3%	2.9%	4.1%	5.1%	-3.0%	-1.5%	
New York City		-23%	-10.9%	3.0%	5.0%	-4.4%	1.1%	2.3%	
San Francisco	•	-16%	-32.7%	-5.5%	-7.1%	0.7%	7.4%	-2.0%	
Seattle	•	-49%	-12.6%	2.8%	0.7%	12.1%	24.8%	3.6%	
Washington, DC		27%	-10.3%	-1.4%	-1.1%	4.7%	-0.8%	0.9%	
% Change vs Prior:		-22%	-14.3%	-0.5%	-0.6%	2.6%	1.9%	1.4%	

Standout Statistics by Market

Boston
Despite new demand in Boston remaining flat at a VODI of 28 for three consecutive months while the VODI of the other markets materially declined over the same time, Boston remains the lowest market relative to its pre-COVID levels for the sixth straight month. At the submarket level, we see green shoots in Back Bay/Fenway. In Q4 vs Q3 '22, the unique tenant tours are up by 19%, the highest of any submarket tracked.

Chicago

Large Tech tenants entering the office market in Q4 '22 increased new total demand by 248k sf to 460k sf, following a near 50% decrease in new Tech tenants' requirements from Q2 to Q3 '22. Lease proposal volume was down 8.8% while Starting Rents (+1.4%) and NERs (+1.8%) were up slightly, despite modest increases to Tl/sf/yr (+3.7%). The Central/South Loop experienced an uptick in the count of unique tenant tours up by 24% in '22 vs '21.



Houston

After a strong Q3, a 42.9% QoQ drop in the VODI brings Houston more in line with its peers vs ending Q3 at 112% of average 2018-'19 new demand levels. The decline in demand can be attributed to the market's correlation to the oil industry and the drop in pricing from \$100+/- per barrel in H1 '22 to the low \$70s at year-end '22. Houston was the only market with an increase in proposal volume, up 9.3% in Q4 '22. Houston also had the lowest percentage drop in Active Demand QoQ with 7.8M sf of Active Demand at the end of Q4 '22. However, Tl/sf/yr increased 8.9% in H2 '22 vs H1 '22 pushing current TI as a percent of Starting Rent to the highest ratio of all markets at 22.1%. The Energy Corridor, which was up by 31% YoY for the total count of unique tours, was down by 23% in Q4 vs Q3 '22.

Los Angeles

264k sf of new demand in Dec. '22 marked the lowest monthly reading since COVID lockdowns in 2020 and, as a result, the VODI dropped 30% to 47 in Dec. '22. The volume of lease proposals declined by 40.3% in T6M vs prior T6M. The good news is lease economics are improving across Starting Rents (+2.9%), NERs (+4.1%), and Free Rent (-3.0%). A lack of tenant requirements of 50K+ and growing TI's (+5.1%) in H2 '22 vs H1 '22 will be two key factors to watch in early '23 to stop this top market performer from Q2 '22 sliding too far from its relative peak.

New York City

NERs were up by 5.0% to \$69/sf for the T6M over the prior T6M as TI dropped by 4.4% (for proposals 1K+ & 36+ mos), duration increased, and tenants continued to reach for quality (compositional shifts). This is a good sign since the count of lease proposals dropped by 10.9% in the T6M over the prior T6M. The decline was attributable to the FIRE and TAMI sectors which declined in YoY sf of new requirements by 27% and 39%, respectively. The professional service industry was one of the only groups with an increase in new demand requirements, up 12% YoY.

San Francisco

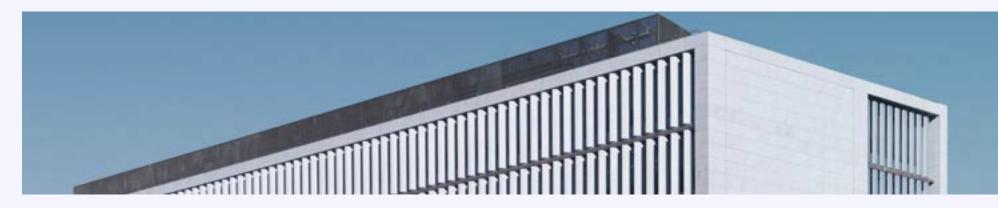
The <10k tranche was the only size segment to grow in the volume and number of requirements in '22 vs '21. This growth overtook the 50k+ segment by volume (sf), which is uncommon and a major shift in market dynamics. In particular, the <10k segment for the Tech, Professional Services, and Creative sectors registered double-digit YoY requirement volume growth in 2022.

Seattle

The VODI eroded 38 points from 77 to 39 in Dec '22 from Dec '21 down 49% as new (sf) requirements from the TAMI sector had the steepest industry decline of 49% YoY. New professional services requirements grew 38% YoY, totaling just shy of 1.5M sf. Starting Rents bumped up 2.8% to \$53/sf from 1H to 2H '22, but were offset by a 12.1% increase in TI to \$9.68/sf/yr. Non-core central business district submarkets gained momentum (+5%) in Q4 vs Q3 '22 for count of unique tenant tours during a quarter where most submarkets were down.

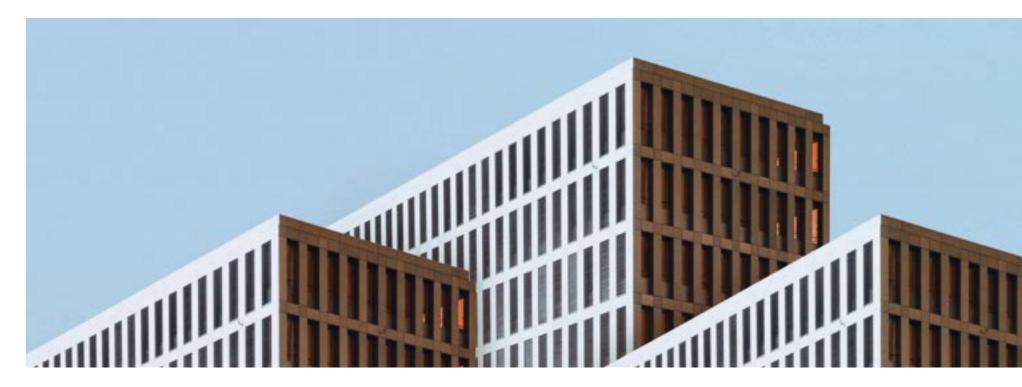
Washington, D.C.

With a year-end VODI reading of 57, DC is the only major market to realize a VODI increase YoY in Dec. '22, up 26.7% from Dec. '21. H2 '22 recorded more consistent large tenant demand in DC than in H2 '21 and drove the increase in new requirements. Large tenant (50k+) demand increased 56% YoY, while smaller tenants under 10k have decreased by 11%. The East End has the second-highest QoQ unique tenant tour increase at 7% in Q4 '22. DC had the second lowest percent drop of Total Active Demand (sf) for the quarter ending the year at 6.7M.



Markets on the Move

In this quarterly report, we highlight the markets that have or are well positioned to outperform the other national markets and relative benchmarks for the other metro markets tracked by VTS. Q4 '22 was a challenging period across the board. Thus, in a tough quarter, we will award the New York City market as our market on the move for Q4 '22. The resilience of the New York market as it was the first market and most adversely impacted by the pandemic yet quickly rebounded, and receives our Q4 '22 market on the move mention. The next page is a side-by-side comparison of Q3's winner, Washington, D.C. to New York City.



Market Health and Momentum Comparison

The below table spotlights key health and momentum data points between Washington, D.C., and New York City. Washington, D.C. is the only market with a positive change in tenant demand YoY, and New York City continues to be the market exhibiting the strongest flight to quality dynamics.

Market Health and Momentum Comparison							
Metric or % Change	New York City	Washington, D.C.	Mkt Avg	Analysis Time Frame			
Demand							
% Change # of Proposals	-10.9% (4)	-10.3% (3)	-14.3%	T6M (Dec '22) to Prior T6M			
VODI	54 (3))	57 (2)	46	Dec. '22			
% Change New Req SF	-15% (4)	9% (2)	-14.%	2022 to 2021			
% Change Count of New Reqs	-18% (6)	-19% (7)	-16.0%	T3M (Dec '22) over Prior T3M			
% Change Active Demand sf	-11.6% (5)	-6.5% (2)	-11.1%	Last Q (Q4 '22) to Prior Q			
	Re	ent Dynamics (Class A Tro	phy 36+ Mos) ^[2]				
NER Growth [8]	4.9% (1)	-6.3% (7)	-5.3%	T6M (Dec '22) to Pre-Covid			
NER Growth [8]	5.7% (1)	-1.8% (6)	-1.8%	T6M (Dec '22) to Prior TTM			
NER Growth [8]	5% (1)	-1.1% (6)	-0.6%	T6M (Dec '22) to Prior T6M			
% Change Starting Gross Rent	6.5% (2)	-1.1% (6)	-1.1%	T6M (Dec '22) to Pre-Covid			
% Change Starting Gross Rent	3% (1)	-1.4% (7))	-0.5%	T6M (Dec '22) to Prior T6M			
TI's as % of Starting Rent	14.9% (1)	18.5% (5)	18.5%	T6M			
% Change in TI	-4.4% (1)	4.7% (4)	2.6%	T6M (Dec '22) to Prior T6M			
% Change in TI [8]	7.6% (1)	20.3% (6)	15.5%	T6M (Dec '22) to Pre-Covid			
% Change in Free Rent ^[8]	36% (5)	39% (6)	33.9%	'T6M (Dec '22) to Pre-Covid			
% Change top 10% NER Premium ^[7]	36% (1)	-4% (7))	10%	'21, '22 Executed + Active Proposals to Executed '18 & '19			
Top 10% NER Premium ^[7]	95% (1)	52% (3)	57.3%	Top 10% vs 90% Avg Rent in '21, '22 YTD Executed + Active Proposals			
Average rank of top 8 markets	2.4	4.9					

*Figures in green ranked in top 4 market and in red for rank 5-8 for a given category.

Notes

^[1] S&P 500 and NASDAQ pricing data from Yahoo Finance.

^[2] Proposal data is limited to Class A (+Trophy in NY) buildings and a min. of 36 months with a min. of 1,000 sf proposed lease unless otherwise noted.

^[3] Unless noted, the period change is T6M ending Dec. 31 2022 vs T6M ending Jun. 30, 2022.

^[4] The change is based on the count (not sf) of the number of proposals logged in VTS Lease.

^[5] NER adds \$15 to HOU and \$20 to CHI of average expense reimbursements for gross rent comparisons.

^[6] Active Demand (AD) quantifies the total sf and count of requirements touring/pursuing space in the market and is similar to Tenants In The Market

 $^{[7]}$ NER for proposals and executed leases 1k+ sf, 12+ mo term over the specified time period.

^[8] Concessions are for executed leases and active proposals with 1K+ sf and a term of 36+ months in Class A and Trophy buildings.

Appendix available upon request for charts and tables supporting the green shoots and other emerging trends and themes referenced in this report.

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