EPRA Iberia Conference 2022

Green Street’s Cap-Ex Insights

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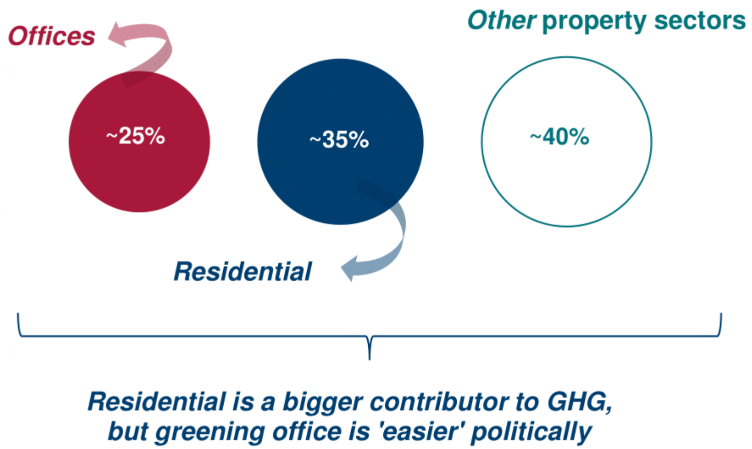
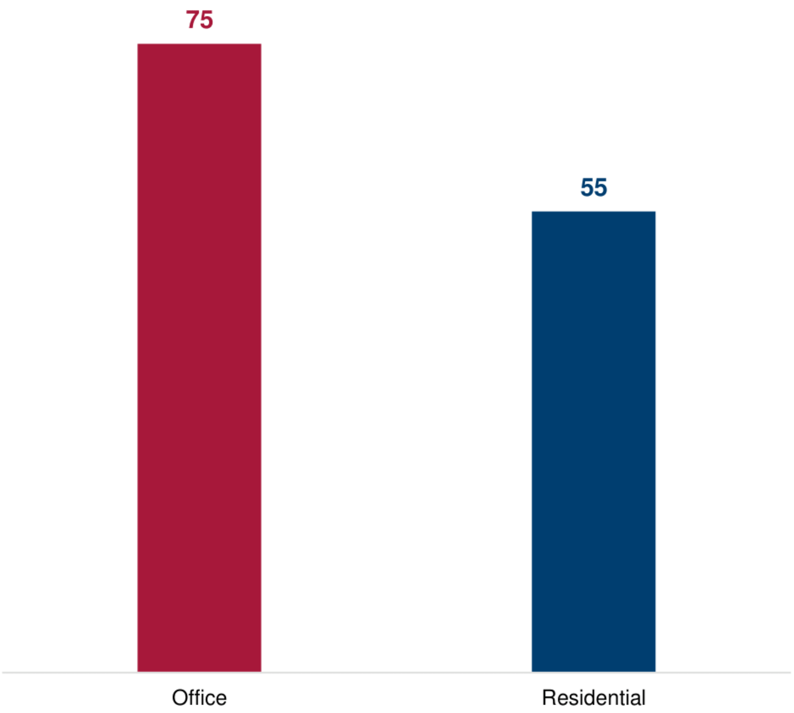
Residential Pollutes More, But Office Bears Higher Risk

Office Investors Be Warned: Offices can make up ~25% of property-related pollution in urban areas, second only to the residential sector. Policy makers are likely to focus CO2 reducing efforts on the former considering (i) the sector's higher carbon intensity, (ii) the socially and politically sensitive issue of penalising voters directly and (iii) the rise of work-from-home rendering office space more obsolete. The threat is materialising: it is estimated that ~10% of Central London offices could be earmarked by regulators as unfit-for-purpose from 2023 onwards.

Greenhouse Gas Emissions in Urban Environment:
Share of Total, per Property Sector



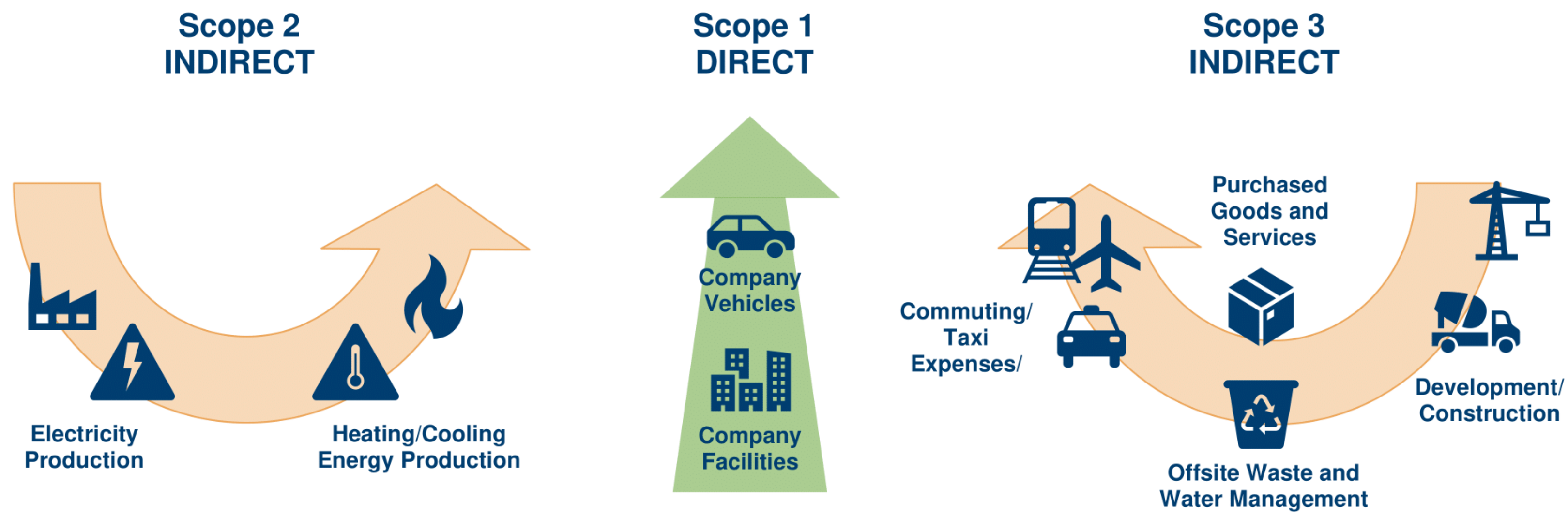
Greenhouse Gas Emissions:
kg CO_2e / sqm / year



Source: New York City Council, Financial Times, Green Street

Greenhouse Gas (GHG) Emissions 101

Scoping It Out: Greenhouse gas (GHG) emissions can be broken down into three scopes. Scope 1 and 2 emissions are more clearly and consistently reported, but Scope 3 emissions are necessary for a full understanding of a company's carbon footprint. These scopes define the real estate industry emissions footprint and investors should become familiar with these to assess and properly distinguish future risks by landlord.



<u>Scope 2:</u> includes indirect GHG emissions from the generation of electricity, heat, or steam	<u>Scope 1:</u> includes all direct GHG emissions from sources owned or controlled by REIT	<u>Scope 3:</u> includes all indirect GHG emissions from sources not owned or directly controlled by REIT, but relate to its activities

NB!

Scope 2 <u>EXCLUDES</u> Space Where REIT Lacks Operational Control

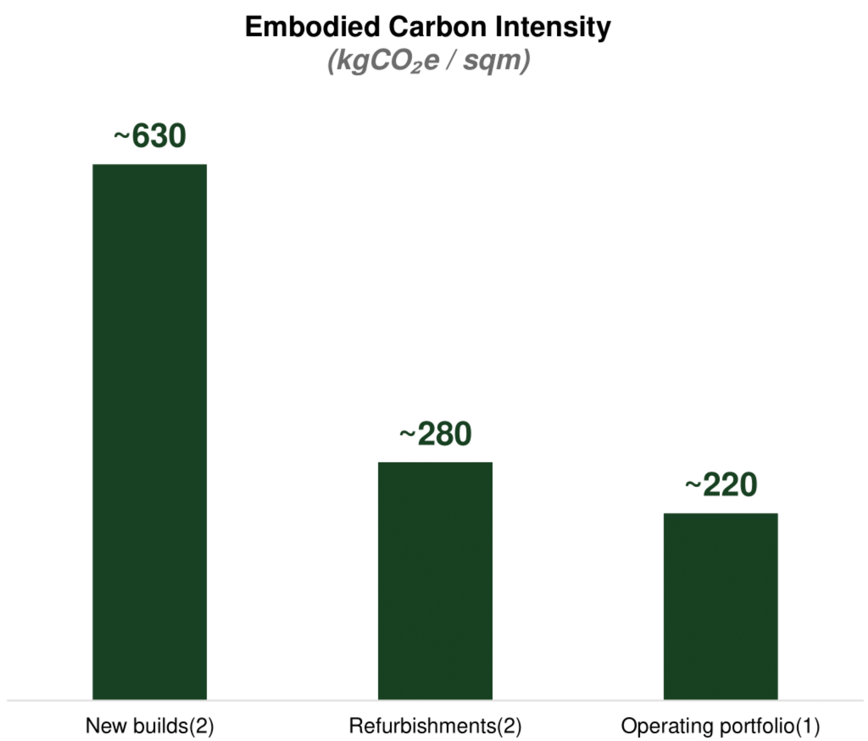
Scope 1 Typically Constitutes a Small Share of REIT Emissions

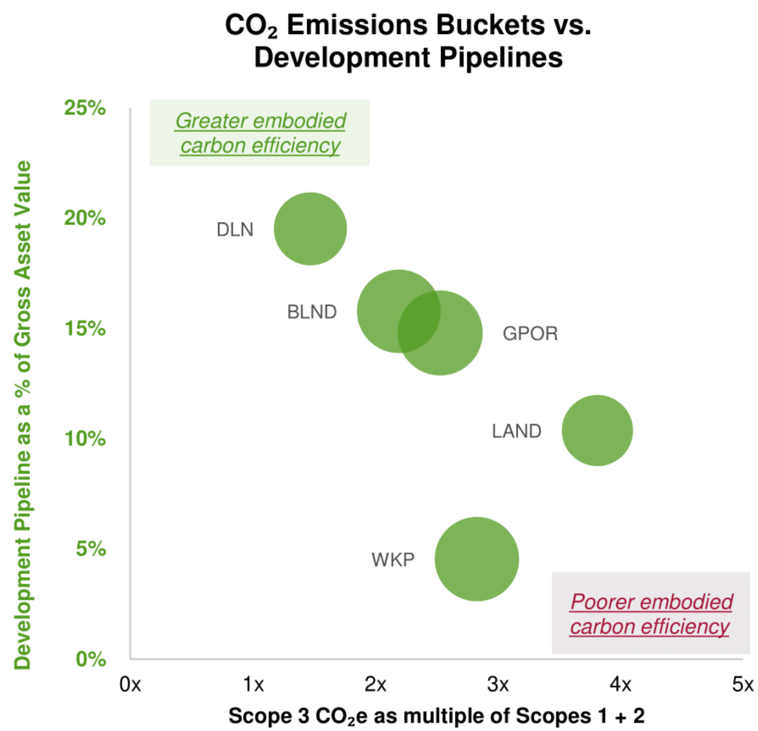
Heavy Developers Have a Very High Proportion of Scope 3 Emissions

Source: Greenhouse Gas Protocol

Thinking Through '*Whole Life Cycle Carbon*' Approach

(Re)develop, Retrofit or Just Operate? A *whole life-cycle carbon approach* (i.e., combining embodied carbon from construction activity with CO2 emissions from operational activity) should be used when assessing an office portfolio's future sustainability credentials. Whilst (re)developments are costlier than retrofits from both an economic and environmental standpoint, retro-fitting initiatives seem to strike the right balance between defending obsolescence and not harming the environment. This report assesses where that balance seems to be.

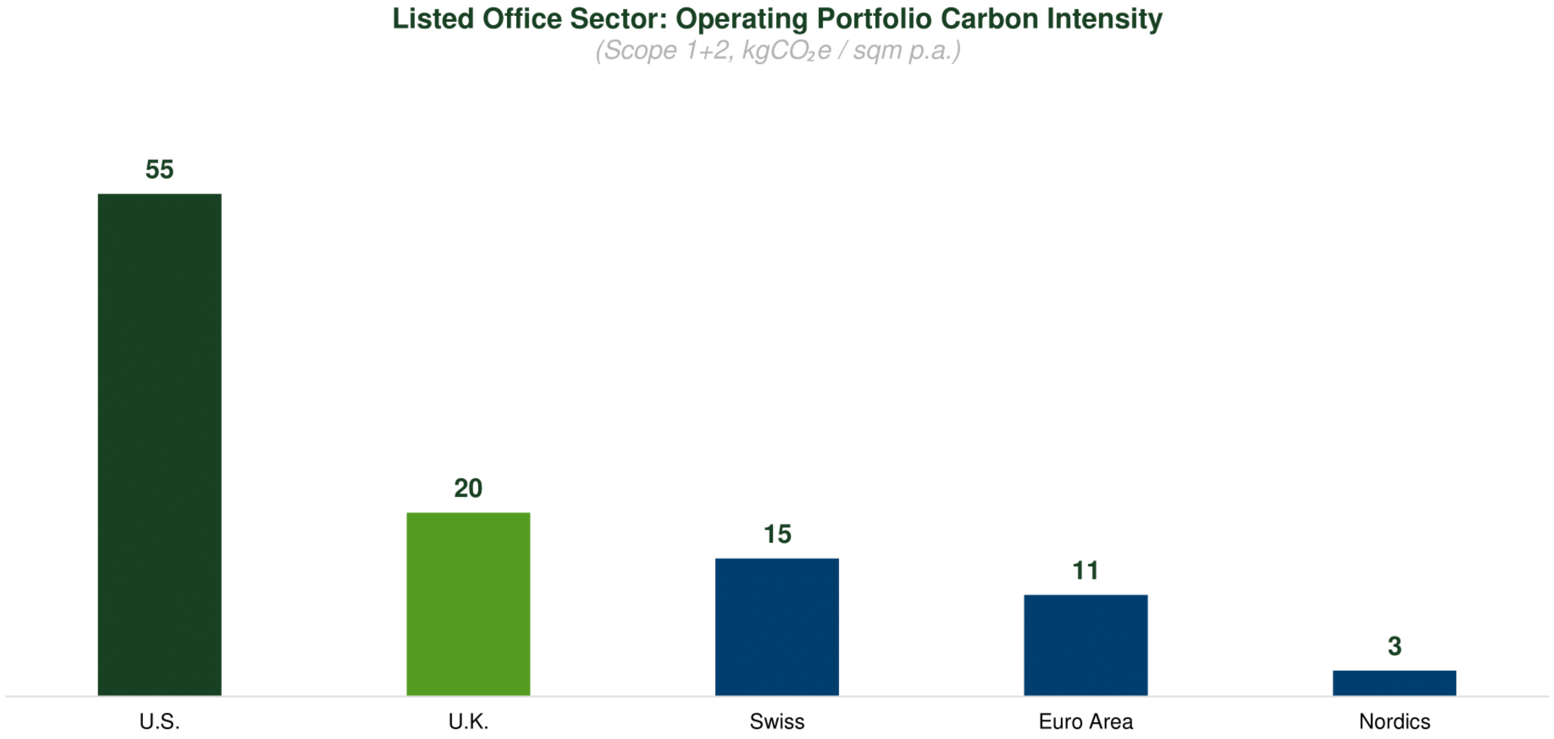




Note: Bubble sizes of the right-hand-side chart represent companies kg CO_2e/sqm/yr. For example, GPOR emitted ~20kg of carbon dioxide per sqm over the last financial year.
(1) Simple average of Pan-European office sector coverage Scope 1 & 2 (reported annual CO_2 emissions, assuming 25% average savings over next 25 yrs).
(2) Average of selected development and refurbishment projects per U.K. REIT disclosure. Assumes operational intensity equal to zero.
Source: GRESB, company disclosures, Green Street

Operating Portfolios: Spot the 'Green' Hippies

Who's the 'Dirtiest' of Them All? It is not surprising to see U.S. office REITs lag far behind Europe when it comes to carbon emissions intensity (i.e., Scope 1 & 2) of their operating portfolios. The magnitude of the spread (~3x) calls for drastic immediate action by U.S. regulators, although the degree of urgency will vary by U.S. State.



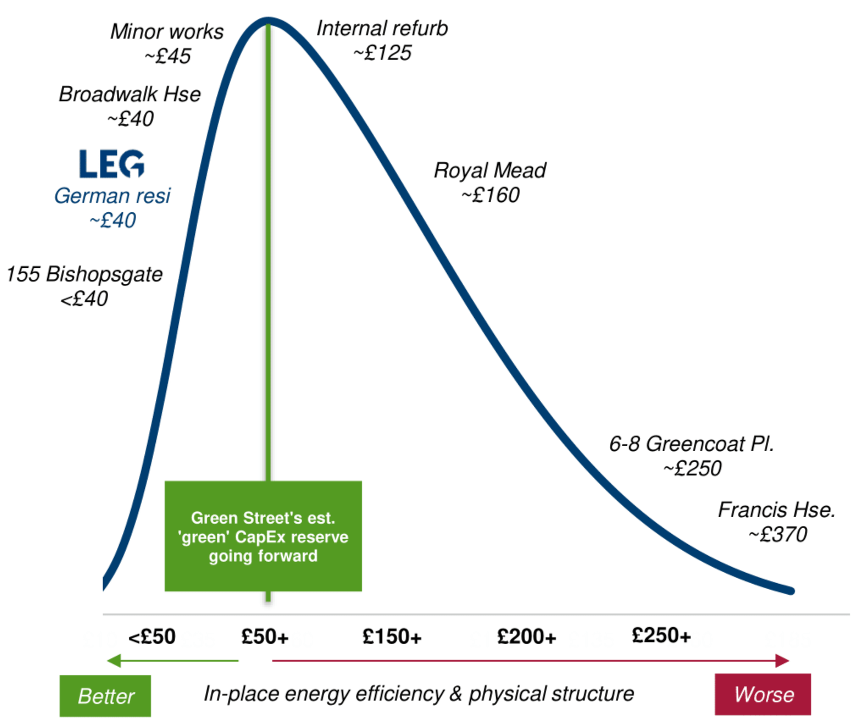
Source: Company disclosure, Green Street

EPC Rating ≠ Destiny: Retrofitting Economics are Asset-Specific

Not One Number: Effective CapEx requirements to modernise premises are asset-specific and inferring rules of thumbs is a perilous exercise, but evidence could be pointing towards ~£50/sqft. as a starting point for well-maintained office portfolios, albeit risk to this estimate is to the upside.

Cost Estimates to Improve Energy Efficiency: Raising Office EPC Rating to >C

Cost per sq. ft.



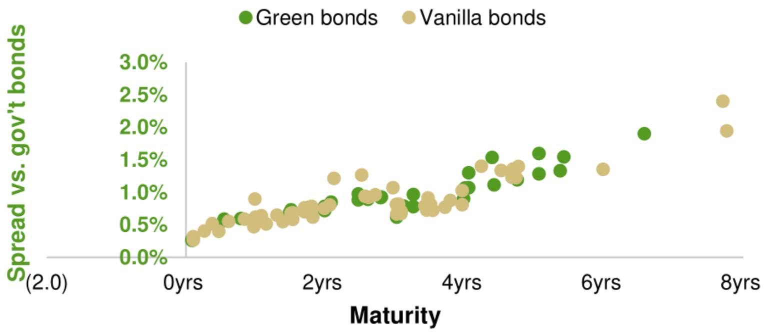
Source: Derwent London, LEG Immobilien, British Land, CBRE, Green Street

Property	Project scope / description
Francis Hse. *C → B*	*Insulation work and installation of electric systems took place. Other works included lifts installations, reconfiguring floorplates and asbestos removal.*
6-8 Greencoat Pl. *E → B*	*Nature of the works include electric heating/cooling and double-glazed windows installations, enhanced sub-metering, LED lighting, and improved facilities*
Royal Mead *BREEAM Excellent*	*Insulation/glazing work, lift installations, new HVAC systems and suspended ceilings configurations with full access raised floors. LED lighting installations*
Broadwalk Hse. *E → C*	*Strip outs/refitting of several stories, introduced new lighting, lifts were refurbished, and expanded end-of-journey facilities.*
German Residential *G → B*	*Costs for energetic refurbs are easier to estimate in the resi space. LEG points to necessary works in shell insulation, thermally efficient windows/doors and improving heating systems*
155 Bishopsgate *E → B*	*Strip outs/refitting of several stories (incl. reception and lobby). Performed work to the facade. Escalator refurbishment. Heat and cooling pumps replacement, smart systems and LED lighting*

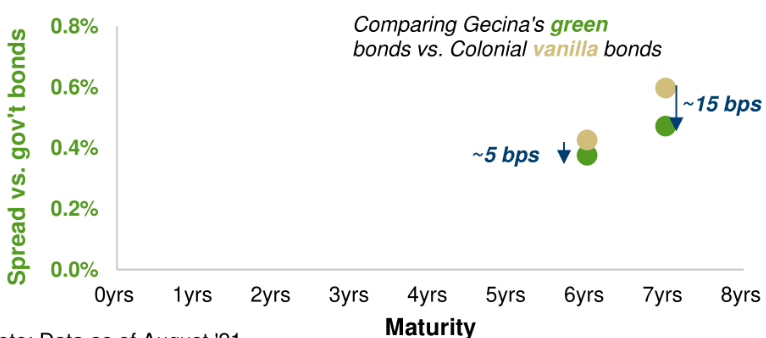
"Green" Bonds Not *That* Much Cheaper… Yet

Little-to-No Green Premia: No discernible cost of capital advantage can be detected in Nordic property companies'[1] bond issuances. However, directly comparing bonds issued by Gecina and Inmobiliare Colonial[2] show a slight "green" premium. There is evidence showing that "green" bonds generate stronger interests in primary markets with oversubscription rates of ~4.3x over 2H20 (vs. 2.9x for "vanilla" bonds) and that the proportion of "green" bonds in the property sector is growing.

SEK Bonds in Green Street Coverage



Gecina (GFC) vs. Colonial (COL) Bonds



Listed Property Sector Green Bonds
Green Street coverage

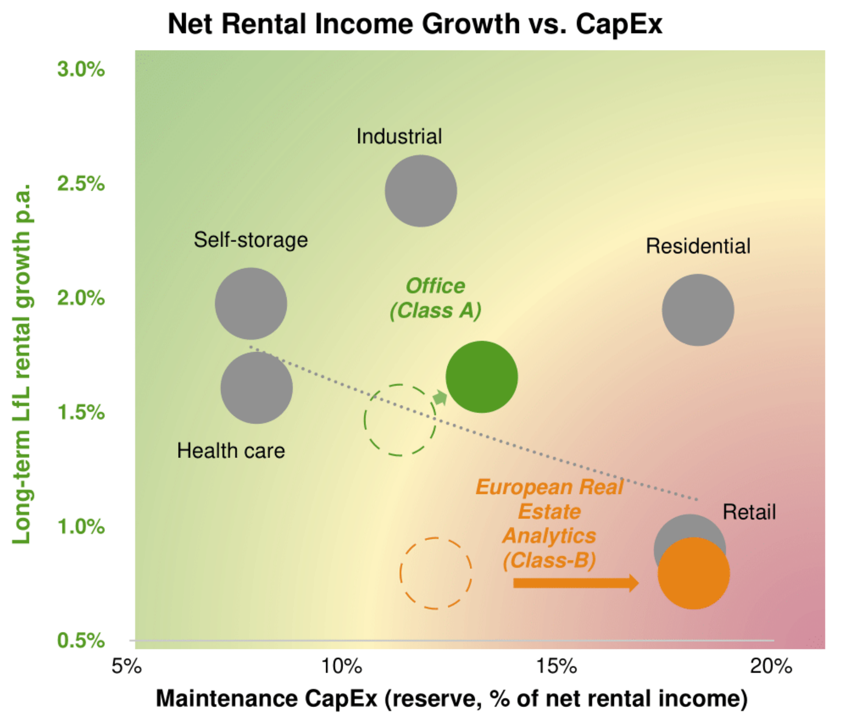
2018		2021
35	*# Green bonds outstanding*	74
€8bn	*Green principal outstanding*	€16bn
10%	*% Green share of issuances*	15%
~€230m	*Avg. green bond issuance*	~€220m

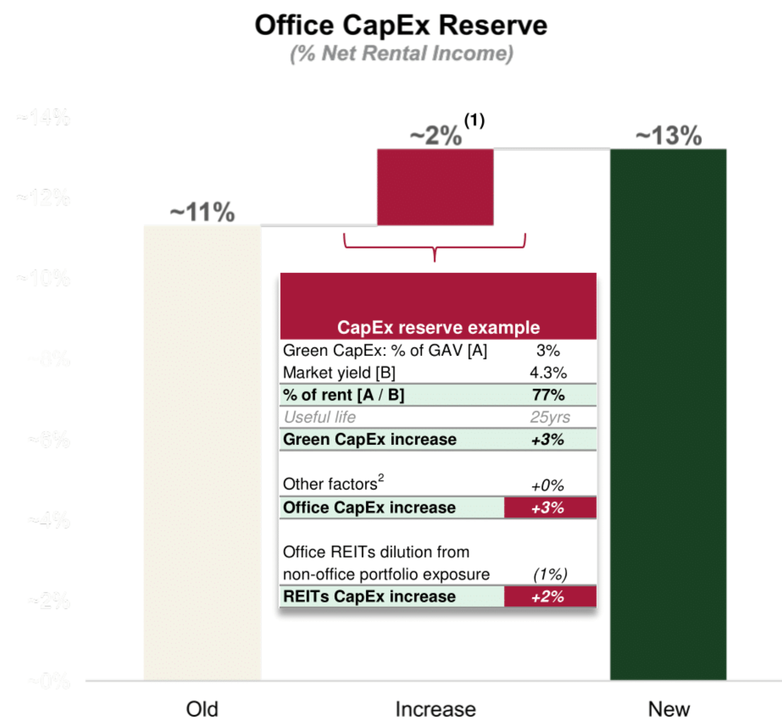
Note: Data as of August '21

1) Nordic property companies are the most active "green bonds" issuers by a wide margin | 2) They both operate in similar sectors/markets and have virtually the same credit rating
Source: Bloomberg, Climate Bonds, Green Street

Pan-European Office Sector's CapEx Reserve Moving Higher

More Costly: The debate around how large landlord's ESG bill will be may be open, but it is almost certain the climate change measures will lead to higher capital expenditure. As a consequence, Green Street is increasing CapEx reserves by ~200 bps[1] across the Office sector. Long-term growth for Class-A portfolios is also increased by ~30 bps (negative spread of ~20 bps to inflation expectations) as prime assets are expected to benefit from occupiers' heightened focus on high-quality space, at the expense of Class-B portfolios.





CapEx reserve example	
Green CapEx: % of GAV [A]	3%
Market yield [B]	4.3%
% of rent [A / B]	**77%**
Useful life	*25yrs*
Green CapEx increase	***+3%***
Other factors[2]	*+0%*
Office CapEx increase	***+3%***
Office REITs dilution from non-office portfolio exposure	*(1%)*
REITs CapEx increase	***+2%***

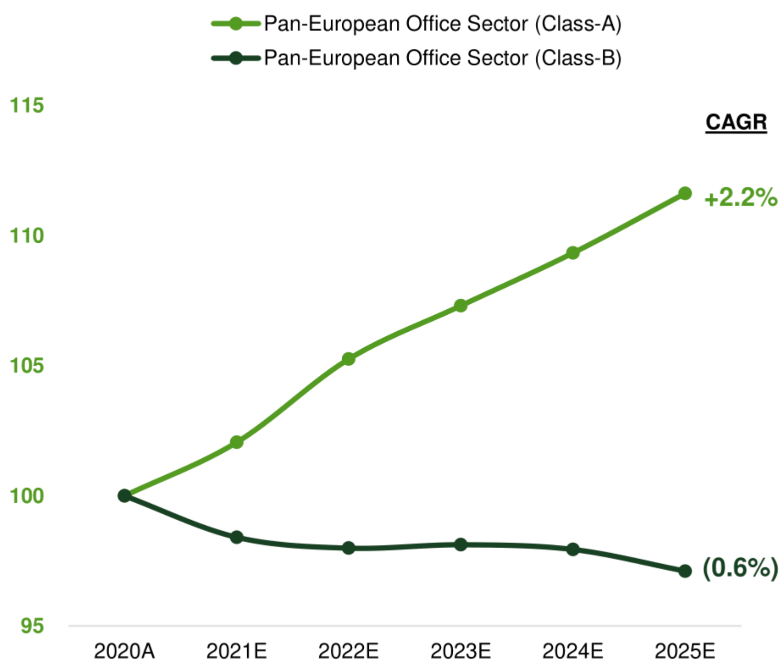
Note: Bottom-up pan-European sectors' average weighted by total asset value.
(1) Green Street is increasing structural CapEx reserve by **+300 bps for office properties**, but many companies in the sector own non-office portfolios..
(2) Include rising exposure to flexible office operations and replacement cost inflation (i.e., materials).
Source: Green Street

Class-A vs. Class-B Quality: 'A' Wins Hands Down

Diverging Paths: The chase for modern and energy efficient office space, coupled with the rising work-from-home trend, is widening the ***high*** vs. ***average*** quality gap. Class-A office market rents are likely to bounce back from the pandemic faster than the overall market (i.e., what we term "Class-B" below). Class-B offices are priced to return lower unlevered IRRs than Class-A at present, suggesting that there is elevated risk of material total property return underperformance (relative to Class A) ahead.

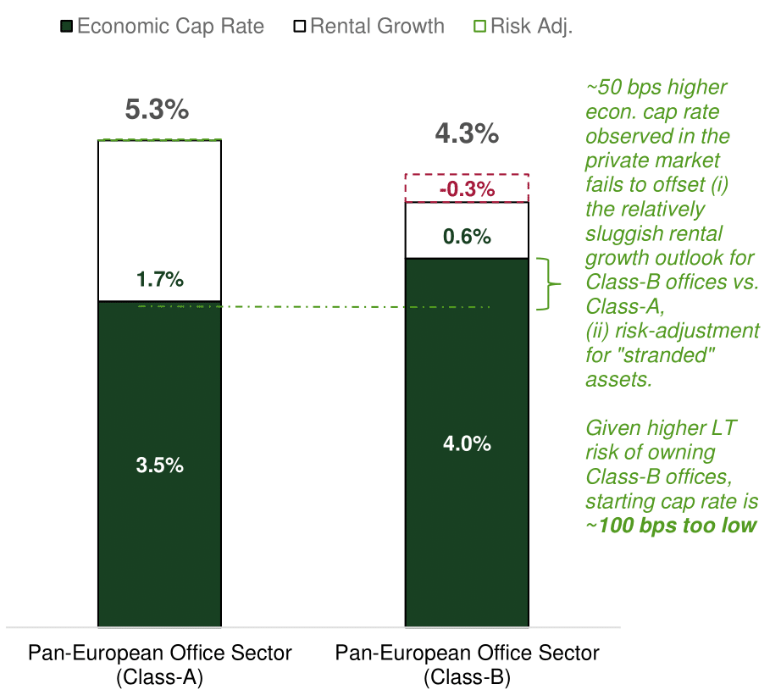
Office Market Rental Growth Outlook

Top 25 European Markets



Office Unlevered IRR Projections

Pan-European Average



Note: 'Rent Growth' per RHS chart is blend avg. of near- and long-term estimates and thus should not tie with LHS chart (only near-term). Timing differences also exist.
Note 2: Pan-European office sector weighted average LfL NRI growth by GAV. European Real Estate Analytics Top 25 markets weighted average by GDP.
Source: Green Street

Pan-European Private Property Market Sector Picking

It Ain't Pretty For Class-B Offices: When put in a greater European context, Risk-adjusted returns for Offices (Class-A) provide average return despite the risk. On the other hand, prospective returns on offer from *average* quality office assets (Class-B) are dragged down by (i) higher CapEx requirements, (ii) weak rental prospects and (iii) risk of obsolescence, despite increased defensive "green" CapEx considerations.

Sector	EPRA NIY Cap Rate[1]	Cap Ex Reserve[2]	Economic Cap Rate	Estimated Inflation[3]	LFL NOI '22-'25	Growth Long Term	Adjustment for Risk[4]	Return Premium to 10-Yr Govt Bond (Basis Points)[5]
Self Storage	5.1%	+8%	5.5%	+2.0%	+4.0%	+2.0%	-	740
UK Student Housing	4.3%	+15%	4.0%	+2.0%	+5.6%	+2.0%	-	600
Continental Health Care	4.4%	+8%	4.3%	+1.8%	+1.4%	+1.5%	-	590
Nordic Residential	3.7%	+13%	3.3%	+2.2%	+3.2%	+2.1%	+0.1%	570
Nordic Office	4.0%	+13%	3.3%	+2.6%	+2.9%	+2.5%	-	570
UK Health Care	4.3%	+8%	4.2%	+2.0%	+1.6%	+1.8%	+0.1%	560
Continental Office	3.8%	+14%	3.5%	+1.8%	+2.6%	+1.5%	-	510
Pan-European Office (Class-A)(6)	**3.9%**	**+13%**	**3.5%**	**+1.9%**	**+2.3%**	**+1.7%**	**+0.0%**	**510**
Industrial	3.2%	+12%	3.0%	+2.0%	+3.1%	+2.5%	-	510
German Residential	2.7%	+20%	2.1%	+1.9%	+3.2%	+1.9%	+0.5%	500
UK Office	4.3%	+12%	4.0%	+2.0%	+1.7%	+1.5%	-	500
Continental Retail	5.4%	+19%	3.8%	+1.9%	+4.3%	+0.8%	-	490
Swiss Office	3.2%	+13%	3.0%	+1.7%	+1.0%	+1.4%	+0.1%	470
UK Retail	4.8%	+15%	3.6%	+1.9%	+2.1%	+1.2%	-	470
UK Residential	2.6%	+14%	2.4%	+2.0%	+3.3%	+2.2%	+0.2%	430
Pan-European Office (Class-B)(6)	**4.6%**	**+18%**	**4.0%**	**+1.9%**	**-0.3%**	**+0.8%**	**-0.3%**	**420**
United Kingdom	4.0%	+12%	3.7%	+2.0%	+2.6%	+1.9%	+0.0%	520
Continental Europe	3.7%	+17%	3.1%	+1.9%	+3.1%	+1.6%	+0.2%	510

Note: Data at 30-Aug-21.
(1) Yield based on '19 NOI. Cap Rate and NIY are the benchmark property yield metrics for the U.S. and U.K., respectively. A better metric is Economic Cap Rate, which uses the U.S. definition of yield (NOI/Value) and adjusts for cap ex. (2) Structural CapEx reserve as a % of NRI (*differs from Green Street Global Property Allocation*)
(3) Inflation estimates are long-term estimates based on breakeven inflation implied from the pricing of inflation-linked government bonds (U.S.) and inflation swaps (U.K. and Eurozone).
(4) Property types with less risk have their unadjusted returns increased, while those with more risk have their returns decreased.
(5) Differences in sovereign yields play a big role in the output. In theory, lower rates should be attributable to lower inflation expectations, but that is often not the case. Instead, large differences in real yields are commonplace.
(6) Class-A is Green Street Pan-European Office listed coverage (weighted by asset value) versus Class-B which refers to Green Street Real Estate Analytics (top 25 markets).
Source: Green Street

Slide Requests

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