

Meeting the Commercial Property Retrofit Challenge

Part 1: Defining a Strategy

Q3 2024

How to identify key areas and assess the best asset decarbonisation and future-proofing strategy

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The quick take

The potential obsolescence of buildings is accelerating, driven by evolving regulatory, physical, financial, and functional risks, relating to sustainability. This report, the first in a three-part series, outlines the challenges, strategies, and solutions in light of these risks

KEY TAKEAWAYS

70%

Regulatory risks loom large: 70% of commercial property floor space is currently rated EPC C or below and, therefore, is at risk of being unlettable if previously proposed minimum standards are implemented in the UK. A 2030 deadline for achieving EPC B ratings in buildings would mean that the pace of retrofitting would need to double. Understanding local market supply and demand will help position asset plan timing and where to focus. Getting ahead of potential future regulation could mean a first-mover advantage, particularly where there is a demand and supply imbalance. We show sustainable office take-up in eight cities on [page 5](#) and from a logistics and retail perspective on [page 13](#).

65%

Not all solutions are capex intensive or require vacant possession to be effective: For example, whilst on average four interventions are required, 65% of properties that improved to an EPC B rating installed LED lighting with smart controls, as one of the measures, while only 36% replaced gas-fired boilers with an air-source heat pump, among other actions. Meeting regulatory and functional requirements will likely require sequencing actions and different implementation levels. We assess the prevalence of different improvements to buildings to improve EPC ratings to a minimum of B on [page 7](#).

55 kWh/m²

Energy intensity is falling short versus future requirements: The 'Paris proof' energy use intensity target is 55 kWh/m² versus an average EPC B-rated office modelled consumption of 184 kWh/m² and an average of all offices of 280 kWh/m². If the UK is to meet our pledge to be net zero by 2050, this is a significant gap to close and could indicate that the focus of asset owners needs to be on actual energy use and metrics beyond EPCs. We look at this and other metrics on [page 9](#).

43%

Occupiers demand sustainable offices to differing degrees: High sustainability credentials are increasingly demanded, particularly by large, visible global corporates, but for other occupier types, such as education providers this requirement, at least to date, is much lower. Currently, 43% of office space leased by professional companies in London has achieved a minimum rating of BREEAM Outstanding, Excellent and/or EPC A rating. A further 30% is at least EPC B rated and/or BREEAM Very Good. We assess current demand, recognising this is likely to grow, for London offices by sustainability level, occupier industry and type on [page 10](#).

4

Planning for future occupier requirements is critical, with E and S elements playing a pivotal role: Any asset strategy needs to be driven by future demand; therefore, we look at what office occupier strategies and wish lists include to identify what amenities and features need to be considered on [page 11](#). On average, office occupiers whose ESG commitments influence real estate decisions to a "great extent" believe their staff require four amenities: the top cited are food & beverage offers, facilities supporting mental wellbeing and gym facilities.

84%

Outdoor amenity provision is high for buildings retrofitted to the best sustainability credentials: 84% of office buildings across England and Wales that have undergone refurbishment and achieved BREEAM 'Outstanding' certification have gardens, terraces, and courtyards, whereas only 54% of those achieving 'Excellent' or 'Very Good' have these and 40% of those without BREEAM certification. We explore data from 400 retrofit cases across the UK to understand the amenity level the market is currently delivering and the level of certification achieved on [page 15](#).

Obsolescence in overdrive

Understanding the term, the risks and the potential impact

The potential obsolescence of buildings is accelerating, driven by evolving regulatory, physical, financial, and functional risks, relating to sustainability. Whilst defined in isolation, these risks are interlinked, complex and already driving investor and developer strategies. For example, just over three-quarters of European investors polled in our

summer 2023 *ESG Property Investor Survey* are looking to improve the quality of their existing portfolios through refurbishing, retrofitting and repurposing. Additionally, 58% are actively seeking to acquire poor ESG-performing assets to improve/upgrade. Even so, the risks of obsolescence are not fully understood – or fully priced in across the market, which may provide

an opportunity for those investors who are able to get ahead of recognising and managing these risks. For example, 76% of real estate professionals across Europe believe that current real estate values do not reflect challenges and opportunities such as climate change, social impact and occupier demand fundamentals, *according to PWC*.

EXPLAINER

What do the four obsolescence risk categories mean?



1. Regulatory

Risk of not meeting regulatory or legal requirements. In the UK, the Minimum Energy Efficiency Standards (MEES) require commercial buildings to have a minimum Energy Performance Certificate (EPC) rating of E to be lettable from 1 April 2023. There are proposals to raise this minimum to a C rating by 2027 and a B rating by 2030 – although timelines and implementation have yet to be cemented. The new UK government has pledged to implement stricter MEES in the domestic private rented sector by 2030, which may indicate the direction of travel of the non-domestic sector too. Regardless of uncertainty, the industry has largely taken the minimum as a given and it has become a strategy for many investors, according to our *ESG Property Investors Survey*.



2. Functional

Split into three areas: sustainability, economic and location.

From the sustainability angle, this relates to the shift in tenant preferences and the risk that a building no longer meets occupiers' ESG needs. For example, voluntary and/or mandatory sustainability disclosures, as well as net-zero commitments, mean that occupiers increasingly require efficient buildings. Increases in energy costs have also contributed to an acceleration of this pattern. The way of working and the role of the office is also evolving, meaning that the space required is different and fulfils increasingly diverse functions, flexibility may increasingly need to be embedded. In addition, real estate plays a strategically important role in attracting and retaining talent by providing E and S-related amenities and aspects.

The economic angle relates to the change in the economic makeup influencing the occupiers, e.g., for offices a shift from financial occupiers to life sciences – which requiring different types of space or the need for more logistics facilities and therefore change of use. This can be a more structural shift and something that will be covered in later Knight Frank research. Locational is where the assets' exact location matters due to being in certain districts or type of area e.g. a business park in/out of town or in the central business district.



3. Physical

On a macro-level, those associated with climate change's impacts can face two types of risks: acute and chronic:

- Acute risks are event-driven, including heatwaves, hurricanes, or droughts.
- Chronic risks are linked to long-term climate shifts, such as temperature changes, sea level rise, or soil erosion.

For property, other than insurance repercussions, as discussed below, buildings may increasingly not be able to deliver functionally. For example, warmer summers can add stress to air conditioning units and reduce thermal comfort, or heavier rainfall may not be manageable by guttering systems, causing flooding, and heavy snowfall may cause roofs to collapse.



4. Financial

This covers both the availability and cost of insurance and financing. With rising physical risk, the cost of insuring buildings is increasing, and, in some locations, the availability is limited or absent. Global insured losses from natural catastrophes in 2023 exceeded US\$100 billion for the fourth consecutive year, according to SwissRE. In the UK, commercial property insurance rates rose almost 15% in 2023, according to Marsh's Global Insurance Market Index.

Financial regulations mean that, particularly bank, lenders are assessing loan books on exposure to climate change emissions and incorporating climate risk assessments into their lending practices and portfolio management. This is likely to accelerate following the change in government in the UK, given the Labour Party's commitment to mandating Paris-aligned transition plans for financial institutions and ambition for the UK to become the green financing capital of the world. For banks, sustainability credentials and other metrics are already a screener for regulated bank lenders and this is likely to extend to non-bank lenders in time. This could potentially limit future financing options or cost for properties which aren't ESG compliant and without a plan to become so. Both insurance and financing rates could feed through to asset valuation and returns through changes in operational expenditure.

Regulatory risks loom large

70% of commercial property floor space is currently rated EPC C or below and at risk of being unlettable if previously proposed Minimum Energy Efficiency Standards are implemented. A 2030 deadline for EPC B-rated buildings would mean that the pace of retrofitting would need to double

Regulatory forces, the challenge in numbers

Over half (56%) of all commercial properties across eight major markets¹ in the UK were constructed before 1990. While age does not necessarily determine quality, 80% of buildings that will be standing in 2050 have already been built, according to the World Economic Forum. Therefore, retrofitting existing buildings will be critical to reaching the UK's net zero goal by the 2050 deadline.

At the very least, the minimum retrofit strategy should comply with current and probable future regulatory requirements, notably the potential tightening of Minimum Energy Efficiency Standards (MEES), while also keeping a keen eye on the onward investor and upcoming occupier demand. This may not be as daunting a challenge as perceived, as we explore on [page 7](#). Crucially, being ahead of the proposed timelines will help to position for the future and optimise asset plans.

SLOW PROGRESS HIGHLIGHTS THE NEED FOR ACTION – AND THIS IS MOST ACUTE IN THE OFFICE SECTOR

The office sector is particularly at the sharp end of this, with only one-quarter of office stock in England & Wales currently meeting proposed

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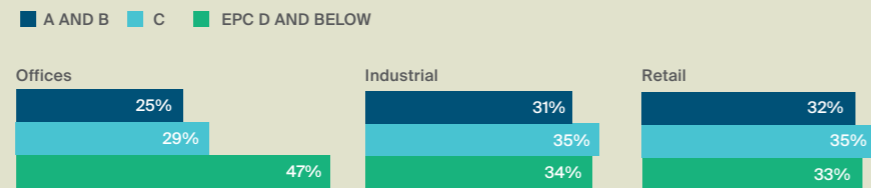
MEES requirements of EPC B or higher. A further 29% are rated C, which may be an interim step, but this leaves almost half of the entire

office floor space in England & Wales with a rating of D or lower.

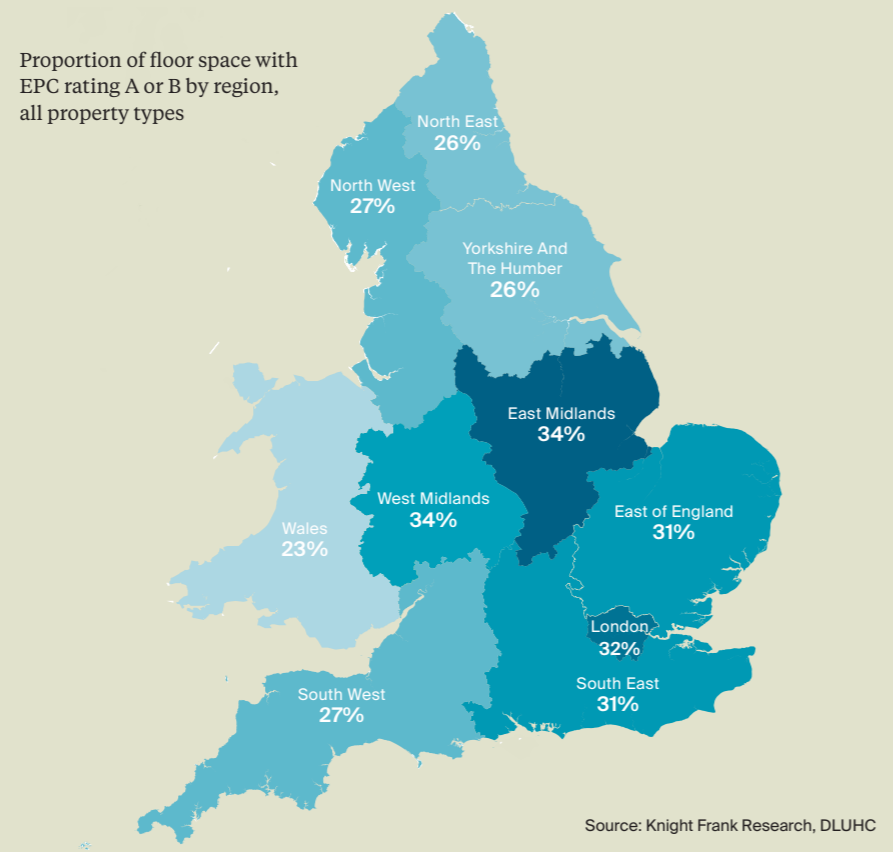
Compared to this, just shy of one-third of the logistics and retail

Figure 1: Falling short

Proportion of total floor space by EPC band and property type



Proportion of floor space with EPC rating A or B by region, all property types



sector buildings have an EPC B rating or higher in England & Wales, although this still leaves the majority potentially facing tougher regulatory requirements in the future.

Regional differences also play a role. Almost two-thirds of properties across all types in the East Midlands and London have an EPC rating below B, while in Wales, this figure is close to three-quarters. Despite differences, it is clear that all regions are falling short.

Progress to date in improving energy efficiency has been slow. Since 2019, the total commercial floor space with an EPC B rating or higher has grown, on average, 8% a year to 2 billion sq ft at the end of 2023. While the pace has been accelerating, the rate would need to more than double to 18% to meet the proposed 2030 deadline for a minimum EPC rating of B.

Looking more specifically at the UK's net zero 2050 pledge, which is enshrined in law, the gap is even more stark. The 'Paris proof' energy use intensity target is 55 kWh/m² versus an average EPC B-rated office modelled consumption of 184 kWh/m² and an average all office modelled consumption of 280 kWh/m². This could indicate that the focus of asset owners needs to be on actual energy use and metrics beyond EPCs.

DEMAND AND SUPPLY IMBALANCE IN THOSE EPC A- AND B- RATED OFFICES

Looking at the market of those which would be MEES compliant, almost half of office leasing transactions across eight major cities in 2023 were for EPC A or B-rated properties, up from 40% in 2019, despite the limited supply. Leeds proved to be the most mismatched market, with 65% of office space leased having an EPC rating of A or B, yet a third of the total office stock meets this level. This is driving a bifurcation in pricing between the highest EPC-rated offices and the rest.

This imbalance is unlikely to change in the near term. In London, for example, around 47% of office space available, as of July 2024, meets the minimum EPC B rating, according to Knight Frank data. That indicates that roughly half of the 12.7 million



sq ft of available office space will likely need upgrading over the next six years based on potentially stricter regulatory requirements. Owners of these properties will need to consider what will be required to bring the space up to potential minimums and whether this can be done with tenants in occupation.

Outside of London, the narrative is broadly the same. Just shy of two-thirds, 65%, of office stock being marketed in the key real estate markets would fail to meet the proposed minimum rating. Variations are minimal, with Cardiff having the lowest available

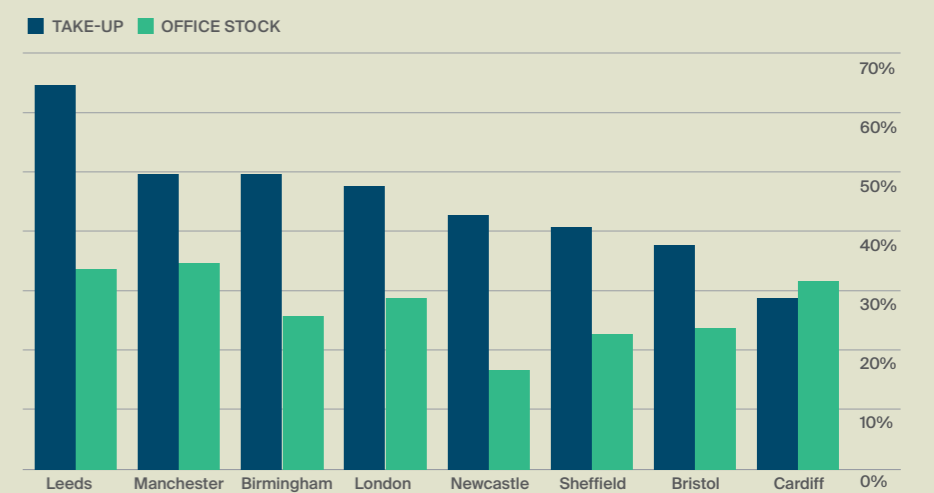
office space rated as EPC B or above at 24%.

Bringing this together, there is a clear, compelling requirement to retrofit. Understanding the local market demand and supply is required to set timelines and priorities as to where there may be the greatest opportunity.

“Almost half of office leasing transactions across eight major cities in 2023 were for EPC A or B-rated properties, up from 40% in 2019, despite the limited supply.”

Figure 2: Balancing act

Proportion of take-up (2023) and total office stock with an EPC rating of B or above



¹Birmingham, Bristol, Cardiff, Newcastle, Leeds, London, Manchester, and Sheffield

Action planning

Before formulating any sustainability or decarbonisation strategy, it is critical to understand what the goal is and align that with market dynamics



Jonathan Hale
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Having a clear goal will position the strategy. Understanding what drives value and liquidity is critical, but this may differ depending on geography, investor type and occupier targets.

Before formulating any sustainability or decarbonisation strategy, extensive stakeholder mapping is required to understand individual requirements. This will include, but is not limited to:

Asset owners and investors:

- Do you have the alignment of Sustainable Finance Disclosure Regulation (SFDR)/Sustainability Disclosure Requirements (SDR) or EU Taxonomy requirements?
- Are there any conflicting agendas?
- What, if any, are the net zero goals?
- What are the timelines and return promises?
- What is the risk appetite and profile?
- What is the green building certification strategy?

Funders:

- What do lenders require to extend credit facilities?
- Are there margin reductions available, and will regulations such as SDR move the dial?

Occupiers:

- What type of occupier is being sought? Have they (occupier) established and communicated their ESG commitments and requirements?

- What does a building with exemplary ESG credentials look like? (i.e. what certifications does it have, and how does this align with occupier expectation?)

Future investors:

- What is the profile, and what liquidity level is wanted?
- Once retrofitted or redeveloped and secured at higher rental values, does this increase investment liquidity due to a larger investor pool with compliance against those value points?

Understanding the starting point will help with phasing and building action plans. Carbon Risk Real Estate Model (CRREM) analysis is a valuable tool for understanding the stranding date, which can help with timing and how risks associated with high carbon emissions assist in building decarbonisation roadmaps.



Action plans must factor in how to work with various stakeholders and engage with any certification process as soon as possible. Landlords often face limitations regarding extensive refurbishments or retrofits for future-proofing their assets. This is where BREEAM In-Use can offer a solution to start early and track progress towards sustainability goals before occupier expectations outpace building performance.

Future grid and energy security requirements can add to liquidity. We have seen clients work with decentralised heat networks, which contribute to not only the lower energy demand and value points but also provide options for power purchase agreements and ancillary income and energy security. The flexibility of energy management - demand and consumption - is an indirect requirement for future-proofing under emerging legislation.

Not all solutions are capex intensive or require vacant possession to be effective

Meeting regulatory and functional requirements will likely require sequencing of actions and different implementation levels

TAKING STEPS

While many investors have identified the need to future-proof against obsolescence risks, the timing of doing so will be driven both by the cost, especially following a period of elevated inflation and the perceived need for vacant possession. However, based on a sample of more than 3,000 commercial properties across office, retail and logistics sectors, which have undergone retrofitting leading to an improved EPC rating of at least B, not all solutions have needed

vacant possession to enact. Nor do they necessarily require high levels of capital expenditure. For example, 65% of properties that improved to an EPC rating of B installed LED lighting with smart controls as one of the measures, while only 36% replaced gas-fired boilers with an air-source heat pump, among other interventions.

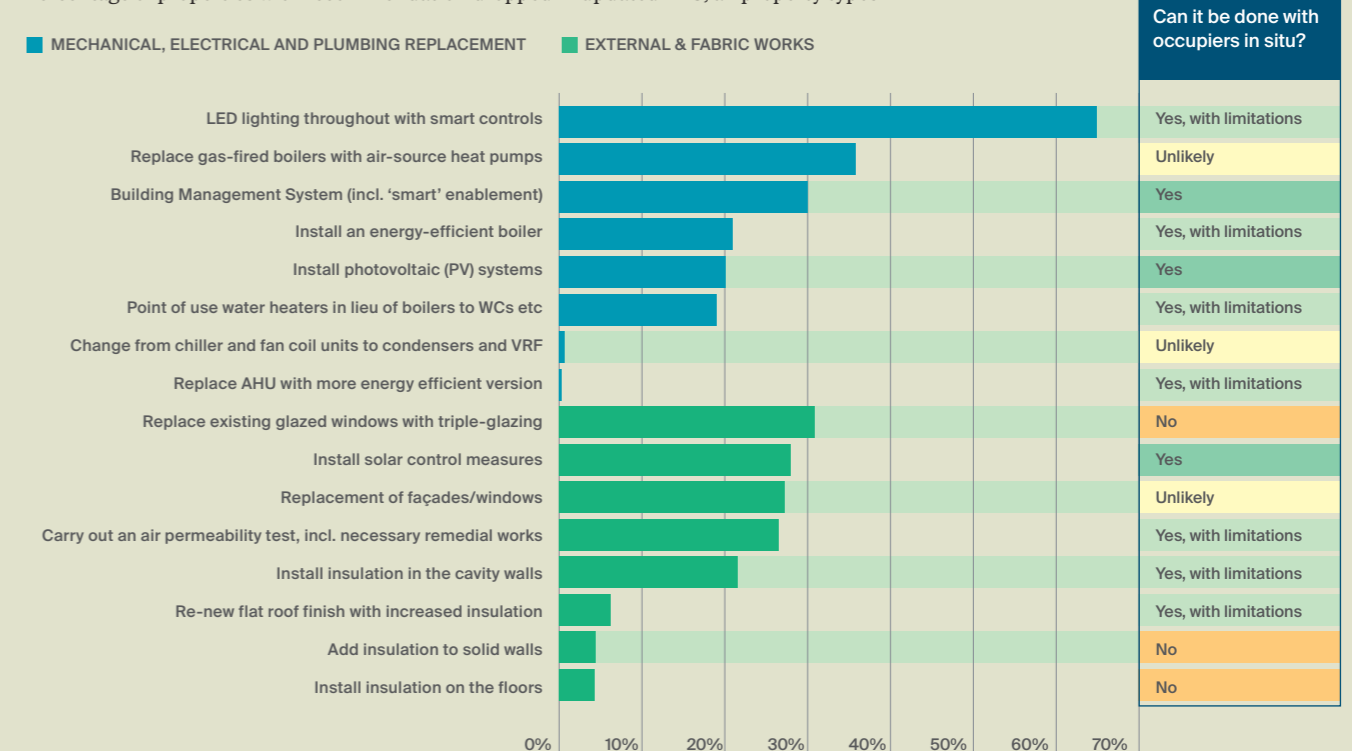
However, typically the light installation is combined with other measures, with an average of four recommendations implemented per property.

65%

of properties that improved to an EPC rating of B installed LED lighting with smart controls as one of the measures, while only 36% replaced gas-fired boilers with an air-source heat pump, among other interventions.

Figure 3: Common improvements

Percentage of properties with recommendation dropped in updated EPC, all property types



Source: Knight Frank Research, DLUHC

42%

Some 42% of property investors require EU Taxonomy compliance, according to our 2023 survey. Understanding this benchmark, is therefore important to understand the drivers behind a significant proportion of investors.

Other common improvements across property types are shown in Figure 3, including 28% of properties installing solar control measures such as reflective coatings or shading devices for windows.

The impact of each recommendation can vary, and some may have a more significant effect on energy efficiency than others. Figure 3 also shows there is the possibility to do some whilst occupiers remain in situ. While our findings highlight the potential for improvement and working around existing tenants, factors such as building design, existing infrastructure and occupier behaviour do vary asset by asset and will shape energy efficiency outcomes and possible

solutions. Each asset will require working with specialists to optimise solutions and timing.

VALUE POINTS FOR INVESTORS

While it's important to look at EPC levels to manage regulatory risk, there are also other ESG-related metrics which investors should also be aware of.

We have assessed prominent policies, regulations, certifications, and professional standards across the UK and Europe, to understand this. These include:

- **AREF ESG Metrics for Real Estate & RICS ESG Data List for Real Estate Valuations.** These are indications that the data valuers are encouraged to consider and, therefore, will directly influence value.
- **BREEAM In-Use and Refurbishment/Fit-Out.** There is a proven *sales* and *rental premium* for BREEAM New Construction-rated office buildings in Prime Central London, and therefore, any metric contributing to these certifications may indirectly influence value by gaining a higher rating.

- **Carbon Risk Real Estate Model (CRREM).** According to our survey, more than half of investors conduct CRREM analysis before acquisition. A distant or absence of a stranding date could influence liquidity, as some investors set a minimum stranding date to even consider an acquisition.

- **European Performance of Buildings Directive (EPBD) and Minimum Energy Efficiency Standards (MEES) in the UK.** The EPBD could be a framework for consideration and show the future direction of UK legislation. Meeting these metrics may help to future-proof assets.

- **EU Taxonomy².** Some 42% of property investors require EU Taxonomy compliance, according to our 2023 survey. Understanding this benchmark, is therefore important to understand the drivers behind a significant proportion of investors.

- **Global Real Estate Sustainability Benchmark (GRESB).** Asset and portfolio benchmarking and any metric contributing to this may indirectly affect the availability and cost of capital due to ESG goals. While we have largely presented asset-level assessments, GRESB is also aggregated to the portfolio level.

- **NABERS.** There is a proven *sales premium* for NABERS-rated office buildings in Sydney and Melbourne, where the market is established. Therefore, any metric contributing to this certification may indirectly influence value by gaining a higher level.

Many different metrics go into the above policies, regulations, certifications, and professional standards, on the next page we summarise some of the most influential metrics across these.



Table 1: Mapping metrics

A summary of the likely most influential metrics and measures for liquidity and value, drawing on prominent policies/regulation/certifications

Metric	Relevance	Specific target examples	Example contributing factors
Biodiversity	EU Taxonomy inclusion, although no specific criteria yet for the activities, and 'Land use and ecology' included within BREEAM.		Planted area, enhancing site ecology and long-term impact on biodiversity.
Building amenities – cycle facilities	There are specified requirements within the EPBD, and they will contribute to BREEAM, RICS, etc.	BREEAM In-Use The number of cycle storage spaces provided must be 10% of the number of staff for the first 500 staff PLUS b) 7% of the number of staff for the following 500 staff PLUS c) 5% of the remaining staff for organisations with over 1000 staff. BREEAM Refurbishment/Fit-Out One cycle space per 10 staff for offices, although the unit of measure can be increased depending on occupant size.	Lockers and showers must also be provided for credits within BREEAM.
Building amenities – other	Metrics included within RICS and contribute to BREEAM & GRESB.		Amenities in and around the building, walkability and daylight.
Embodied carbon	The life-cycle global warming potential (GWP) must be calculated at every stage of the EU Taxonomy. Materials used for construction or renovation – specified in RICS, GRESB, BREEAM.	EU Taxonomy Significant contribution (SC) for new buildings: At least 90% of the non-hazardous construction and demolition waste generated on the construction site is prepared for reuse or recycling. There are specified targets for material types and primary/secondary sources. SC for renovations: The preparation for reuse or recycling of the non-hazardous construction and demolition waste generated on the construction site is at least 70%. At least 50% of the original building is retained. There are specified targets for material types and primary/secondary sources. A maximum of 85% of the material comes from primary raw material with stipulations by material type. LETI targets, from 2030: <350 kgCO ₂ /m ² – 65% reduction over baseline; 50% materials reused sources; and 80% materials can be reused at the end of life.	Material reused.
Energy Use Intensity (EUI) or other related metrics, e.g., Primary Energy Consumption (PEC) Primary Energy Demand (PED)	The primary metric for all - is increasingly moving towards actual rather than predicted or designed. Examples include: • EU Taxonomy compliance specifies thresholds for SC criteria • BREEAM In-Use and Refurbishment/Fit-Out all have a 20-30% weighting for energy Given the inaccuracy and impact, there will be a shift for actual energy use over modelled.	EU Taxonomy SC for acquisition/ownership of buildings: For those built prior to 2020, EPC A rating or PED within the top 15% of the national or regional building stock. For those built post-2020, the building must comply with the Nearly Zero Building PED as set at the national level. SC for new buildings: PED is at least 10 % lower than the nearly zero-energy building (NZEB) requirements threshold. SC for renovations: a reduction of PED of at least 30%. MEES A proposed minimum EPC B rating by 2030 – from Knight Frank's analysis of EPC data, the average primary energy value as per the EPC certificate for an EPC B-rated property is 276 kWh/m ² . For office space, the average primary energy value as per the EPC certificate for an EPC B-rated property, is 184 kWh/m ² . The Paris proof level is 55 kWh/m ² .	Grid electricity/ Natural gas usage, Air-conditioning installations (EPBD prioritises no AC), Passive designs encouraged, building automation and control systems and their capabilities to monitor, control and optimise energy performance.
EV charging infrastructure	There are specified requirements within the EPBD and will contribute to BREEAM, RICS, etc.	EPBD For new buildings with >5 car parking spaces: One charger per 5 parking spaces and pre-cabling for at least 50% of spaces to enable more later. For all non-residential with 20+ spaces from 2027: One charger per 10 spaces and 50% pre-cabling.	
Labels/certifications	Within RICS.	BREEAM Rental premia for prime Central London (PCL) offices: • Outstanding: 12.3% • Excellent: 4.7% • Very Good: 3.7% BREEAM Sales premia for PCL offices: • Excellent: 10.5% • Very Good: 10.1% NABERS (Sydney/Melbourne) offices sales premia: • 5*+: 17.9% • Lower stars: 8.3%	Building Management, Health and Wellbeing and Resilience.
Renewable energy generation	A contributor to energy metrics and certifications, this has relevance in isolation to net zero standards, EPBD, and RICS value metrics.	EPBD From 2027, new buildings over 250 sq m and any major renovation must be solar-ready. BREEAM In-Use An additional five exemplary credits are available for carbon-positive buildings.	The capacity of installed onsite renewable energy generation and energy storage.
Water consumption	Consumption limits are set for 'Do No Significant Harm (DNSH)' principles for new buildings and renovations within the EU Taxonomy. Metrics contribute to BREEAM & GRESB.	EU Taxonomy For example, DNSH for new buildings and renovations: wash hand basin and kitchen taps have a maximum water flow of 6 litres/min; showers have a maximum water flow of 8 litres/min.	Water monitoring and metering and leak detection systems.

²The EU Taxonomy came into force in 2022 and defines what counts as a sustainable economic activity. To be designated as such, the activity must contribute to one of the six environmental objectives within the taxonomy, do no significant harm to any of the five others and comply with minimum social safeguards. There is a defined technical screening criteria to assess this.

Planning for the future occupier requirements

Assessing future tenant demand and occupier requirements is critical. Any asset strategy needs to be driven by future demand; therefore, we look at what office occupier strategies and wish lists include to know what amenities and features need to be considered

Real estate is regarded as a strategic device by office occupiers. Indeed, 94% of respondents from the (Y)OUR SPACE research³ saw real estate supporting, facilitating or embodying wider business strategy, not simply a box in which to place employees. Today, real estate supports a wide array of strategic intent, be that the attraction and retention of talent, increasing collaboration or innovation, or delivering against ESG commitments.

In terms of ESG, 93% of all occupiers believe that their company's commitment to ESG influences the real estate decisions they will make over the next three years – with almost a quarter believing their ESG strategy will influence those decisions to a great extent.

Greater strategic use of real estate by occupiers has two key market implications. First, a move towards sustainably certified buildings and those which embody strong environmental credentials. Second, and as the ESG agenda moves beyond pure environmental concerns, the growing popularity of amenity rich buildings. Understanding the market demand for such buildings in greater detail is therefore hugely important.

Which occupiers are driving current demand?

To begin to understand target office occupiers' requirements, we analysed the profiles of current office tenants. We looked at over 83 million sq ft, just under a third of London's total office stock and assessed the leasing level for varying 'sustainability groups' of

buildings by industry and company type. We classified space into three groups:

Group 1 space holds a BREEAM Outstanding or Excellent and/or EPC A rating.

Group 2 space holds BREEAM Very Good and/or EPC B rating.

Group 3 space is EPC C rating and below.

High sustainability credentials are particularly demanded by large, visible global corporates, yet, it is clear for all occupier types that sustainability remains central.

Over 40% of office space currently leased in London by professional companies, which include legal,

financial, and other professional services has achieved a minimum rating of BREEAM Outstanding, Excellent and/or EPC A rating. A further 30% is at least EPC B rating and/or BREEAM Very Good. Manufacturing companies and corporates show the lowest appetite currently, with under a third (31%) of their current office space in Group 1 and another 31% in Group 2. Therefore, even those less demanding sectors are still predominantly focused on more sustainable office space.

Regarding company type, publicly traded companies have the highest prevalence within Group 1 offices, accounting for over half (53%) of their floor space requirement. This is likely

due to the public visibility as these companies are more beholden to stakeholders and subject to disclosure requirements including Task Force for Climate-related Financial Disclosures (TCFD) requirements, as stated previously includes listed companies, banks, and insurers with 500+. In contrast, companies and institutions in the educational sector have the lowest at 11%.

As Figure 5 illustrates, there is a clear preference in office occupiers for larger spaces among more energy-efficient buildings, particularly evident in the professional occupier. The average amount of floor space leased in Group 1 offices is more than double compared to that in Group 3 offices. For professional office occupiers, the same floor space differential is two and a half times.

Future demand drivers

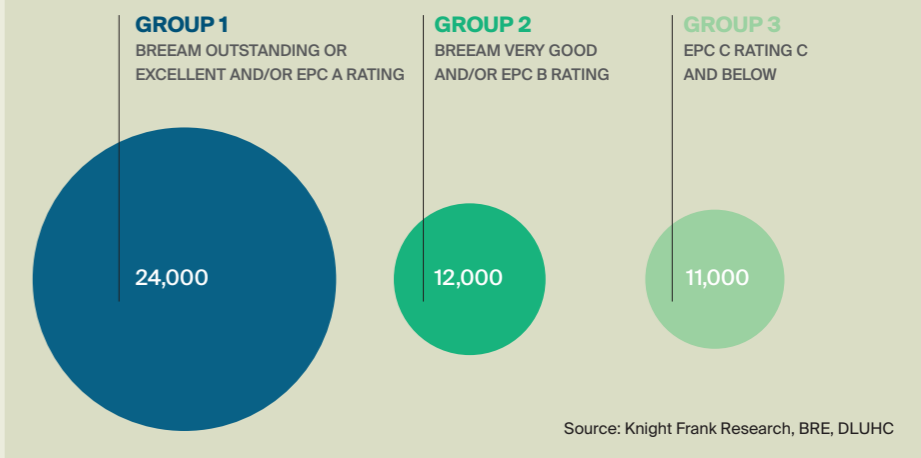
The market dynamics show an apparent structural shift in occupier demand for better quality offices, but current market availability and lease dates drive the current take-up levels. Any asset strategy needs to be driven by future demand; therefore, we look at what office occupier strategies and wish lists include.

ALL ABOUT THE E, EFFICIENT BUILDING DEMAND TO BE DRIVEN BY COMMITMENTS AND DISCLOSURES

With real estate responsible for around 40% of the UK's carbon emissions, energy usage and efficiency could be pivotal to reaching net zero or carbon reduction goals.

Some 572 UK companies have committed to the 'gold standard' of target setting, as at May 2024, the Science Based Targets initiative (SBTi), with 46 aiming for net-zero carbon. Our analysis shows that about one-third are based in central London, occupying just over 13 million sq ft (owner-occupied and leased), with just over half BREEAM-rated. Although they currently represent a small fraction (5%) of the London office market, it will be likely that their space requirements will grow. If simply projecting forward recent trends, this would reach 31 million

Figure 5: Better is bigger?
Average London office lease size (sq ft) by office grouping, current/valid leases



sq ft, accounting for 12% of the current office stock. Therefore, more highly efficient space will be required to meet the growing demand.

Besides those with existing commitments, the TCFD became mandatory in April 2022 for:

- Listed companies, banks, and insurers with 500+ employees.
- UK AIM companies with 500+ employees.
- LLPs with 500+ employees and £500m+ turnover.
- Non-listed companies with 500+ employees and £500m+ turnover.

In addition, the Labour Party manifesto pledge to mandate UK-regulated financial institutions – including banks, asset managers, pension funds, and insurers – and FTSE 100 companies to develop and implement credible transition plans that align with the 1.5°C goal of the Paris Agreement will further this demand.

More companies adopting transition plans and requiring disclosures will further boost the demand for highly efficient space. This will be true of the offices and other real estate they occupy. A significant level of scrutiny will be applied to energy usage and efficiency, with transparency over carbon footprint and other metrics being spotlighted.

E MEETS S, REQUIREMENTS ARE INCREASINGLY GUIDED BY S ELEMENTS

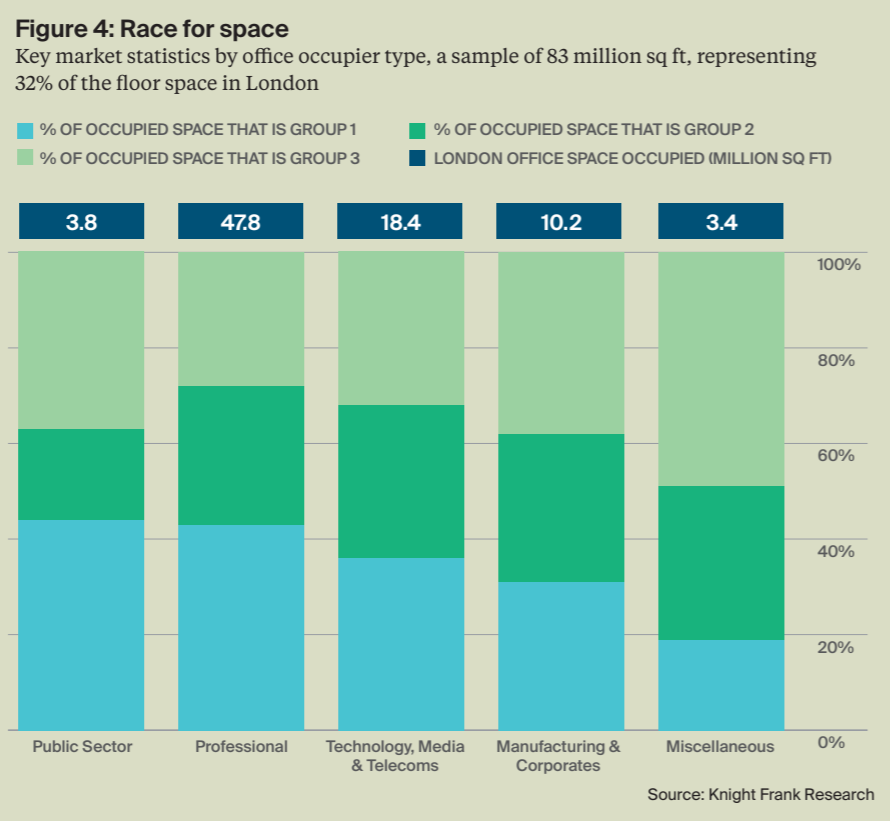
Beyond the immediate E, or energy efficiency and emission goals, the top internal priority of global businesses is

“Beyond the immediate E, or energy efficiency and emission goals, the top internal priority of global businesses is attracting and retaining workers, and amenity-rich workspaces could be a way to deliver this.”

attracting and retaining workers, and amenity-rich workspaces could be a way to deliver this.

We analysed the data from our (Y)OUR SPACE office occupier survey, focusing on whether the corporate commitment to ESG influences future real estate decisions to a great, moderate, or small/no extent and which amenities each respondent believes their staff will demand from their workplace over the next three years. There is a clear pattern for more amenity-rich spaces from those where ESG is a more significant influence, as shown in Figure 6, with:

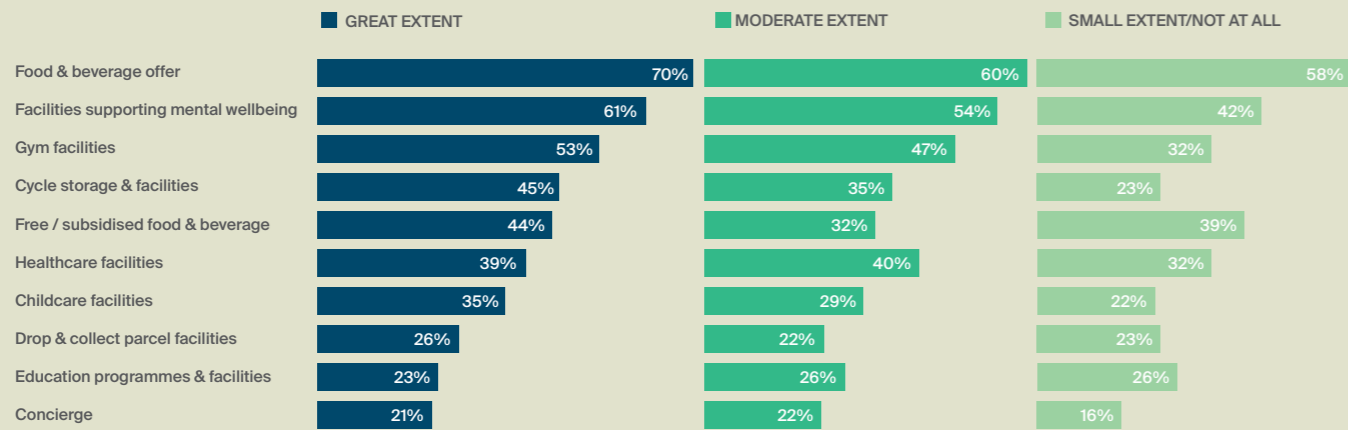
- Those in the “great extent” category will most likely choose best-in-class spaces in their respective markets. On average, they require **4.2 amenities** for their workforce.
- For those whose commitment influences them to a “moderate extent”, the average requirement is **3.7 amenities**.
- And finally, respondents who feel that ESG commitments influence them only “to a small extent” or “not at all” require an average of **3.1 amenities**.



³(Y)OUR SPACE is Knight Frank's global office occupier research. The fourth edition was released in 2023 and included survey responses from more than 640 global office occupiers.

Figure 6: Office wish list

Distribution of amenity requirements based on how office occupier ESG strategies influence future real estate decisions



Source: Knight Frank Research, (Y)OUR SPACE

TOWARDS A THREE-TIERED SYSTEM, WHERE TO POSITION AN ASSET

Given market evidence of demand and stated office occupier strategies, different levels of retrofit will be required. Combining this with local market factors and economics will be essential for delivering the right level to meet demand. The regulatory minimum will be enough for some, i.e., landlords that only need to let their buildings, but greater efficiency and amenities will be required for others. To address the varying levels of retrofit needed, we set

out a three-tiered system based on the extent of retrofitting required:

- **Tier 1:** This scenario represents the best in class of offices. Buildings in this tier typically achieve BREEAM Outstanding and EPC A ratings. Additional amenities are provided to enhance the tenant experience.
- **Tier 2:** Buildings in this category typically achieve BREEAM Excellent and EPC B ratings, indicating a higher level of sustainability and performance than the minimum

standard. This tier also includes basic amenities.

- **Tier 3:** In this scenario, all buildings are upgraded to meet at least an EPC B rating and any other requirements from the Local Authority.

It is essential to understand that there will be variability within each tier, and each asset will need to be assessed individually, depending on location, size, floor plate, and other factors. We will explore these in more detail in Part 2 of the series.

MARKET VIEW

Occupier perspective

How to communicate benefits to occupiers



Richard Proctor
Head of UK Occupier Strategy & Solutions + London Tenant Representation

Whilst there is clear demand from office occupiers for space with high levels of 'ESG credentials', as evidenced by our (Y)OUR SPACE research and take-up of best-in-class space, there is a lack of uniformity among occupiers, and many are playing catch-up to the investment market in terms of sustainability requirements.

Paramount to this is clear communication on why certifications,

sustainability, and social elements matter to them. Whether savings are enabled through energy costs from greater digitisation and efficiency measures or improved wellbeing and retention of employees. There is a dichotomy between those occupiers who face external pressures, such as larger or publicly listed companies with stringent disclosure requirements and talent pressures, and those who are perhaps smaller and less

visible. Larger spaces have been in the crosshairs and are moving faster, but this will cascade down the market.

We continuously have conversations with occupiers about how real estate can support their goals. Our (Y)OUR SPACE research has revealed the narrowing of the gap between occupier ambition and action on ESG. For asset owners, it is critical to understand their occupational needs and what is driving them and then communicate how a building will contribute to those. Location, ease of access and the quality of local amenities remain the key for many occupiers. At a point in the cycle when the supply of high amenity and sustainable buildings is constrained, we are increasingly seeing occupiers looking for regears and potentially working with landlords to improve occupation and obligations so that the building will meet future ESG requirements.

Logically speaking, how the logistics sector is responding

With consumers and retailers increasingly considering the environmental impact of their decisions, sustainability is becoming critical for third-party logistics (3PLs) and delivery partners' business models. 3PLs are competing to enhance their environmental credentials to secure new retailer contracts. Among the top 10 3PL companies and logistics developers we analysed, 9 out of 10 3PLs and half of the logistics developers are committed to achieving net zero.

This focus and commitment have led to a surge in demand for larger, newer,

and more energy-efficient logistics facilities. Over the four years to H1 2024, distribution firms accounted for 43% of all industrial space leased in the UK. Their demand has increasingly been focused on newly built grade-A units, which comprised 65% of space taken by distribution firms over the past year. Their demand has also been increasingly focused on larger warehouses, which have a higher prevalence of A or B ratings, with more than half of those between 250,000 and 400,000 sq ft achieving such a rating. Conversely, smaller warehouses under

100,000 sq ft are less likely to achieve higher ratings, with only 35% achieving an A or B rating.

At the same time, logistics developers are delivering more sustainable buildings and have set BREEAM targets. There are now just over 1,300 BREEAM-certified logistics assets. There were 31% more BREEAM certifications issued for industrial properties in 2023 compared to 2019, with around 30% of those each year gaining a certification. There is a long way to go, yet this shows positive momentum.

Retail occupiers, are they walking the talk?

Retailers specifically have a unique position. Their consumer-facing nature may add pressure for sustainability credentials, yet physical real estate plays a much smaller part, with the bulk of their emissions stemming from supply chains.

Our analysis shows that fewer than 10% of the retail floor space occupied by leading UK retailers had some BREEAM certification. However, all these retailers' have set targets for Scope 1 and 2 emissions, and nearly all have established

targets for Scope 3 emissions, according to our analysis of stated ambition. To avoid claims of green-washing, retailers who espouse green marketing strategies and branding must look evermore critically at the space they occupy.

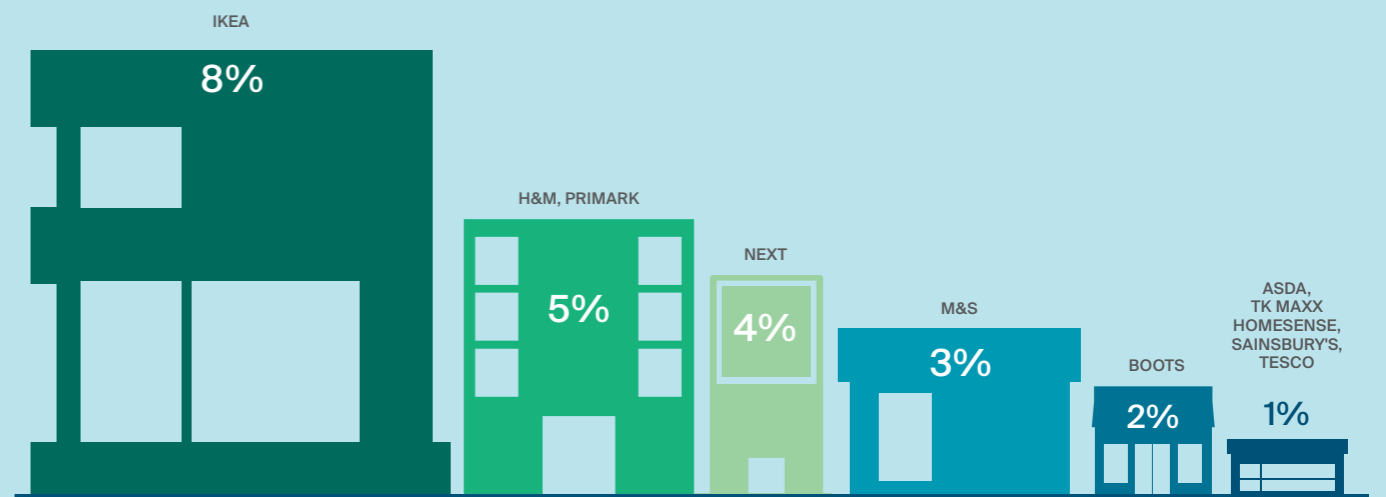
Conversely, less than 1% of the total retail property market has or is pursuing a BREEAM rating, meaning retailers are not significantly increasing their occupancy in green buildings. This presents a future mismatch of demand and supply as

awareness rises of the role of buildings in reaching targets. Those investors focused on high-quality, future-proofed assets could be positioned well.

The market demand for sustainable assets is apparent across sectors and geographies. Yet, supply for 'best in class' or the most sustainable and amenity-rich assets remains limited due to uncertainties around requirements, regulatory and functional, costs and other factors.

Figure 7: Retail's greenest

Proportion of retail space that is BREEAM-rated



Source: Knight Frank Research, CoStar

Measuring up

Having set out the size of the challenge and identified the three tiers, we set out an overview of practical measures in terms of how landlords and asset owners have previously addressed the challenge

Minimum requirement

For office occupiers in our Tier 3 scenario, the minimum regulatory requirements may be sufficient, but the shortfalls of EPCs are well documented, and actual energy efficiency will be most important.

According to EPCs lodged in the past five years, the average modelled primary energy value for offices is 184 kWh/m²/yr., according to an analysis by Johan Hagstrom, Knight Frank Analytics. If there were closer alignment to Europe, which may happen, the top 15% of buildings estimated primary energy value for offices would be 153 kWh/m². Yet, the target stipulated by the UK Green Building Council (UKGBC) is for 160 kWh/m² between 2020-25, falling to 70 kWh/m² for 2035-50 Target – and for new offices to reach 55 kWh/m² from 2050.

Research shows that there is often a gap between predicted and actual energy use in buildings, and therefore, relying on EPCs alone may not be conducive to emissions reduction targets. Energy Certificates (Display Energy Certificates or DEC) rate a building's actual or operational energy use, unlike EPCs. We've compared buildings with both EPC and DEC ratings issued within a year of each other (and only before the 2022 EPC calculation changes) to allow for true comparability on a carbon basis.

DEC ratings are often double the modelled EPC ratings, meaning they are performing worse than expected, with the most significant gaps in offices rated A or B. On average, the modelled rating is 40 kg CO₂/m², almost two times less than the average DEC rating of 79 kg CO₂/m². Interestingly, E-rated buildings outperform their modelled EPC ratings, with actual consumption (106 kg CO₂/m²) slightly lower than the modelled (111 kg CO₂/m²).

Due to this performance gap of EPCs, a significant proportion of investors

Table 2: Easy as EPC

Average primary energy value (kWh/m²/yr) for all EPCs assessed in the past five years and the estimated reduction needed to achieve an EPC B rating

EPC rating band	All commercial		Offices	
	Average	Reduction to a B	Average	Reduction to a B
A	163		112	
B	276		184	
C	363	24%	262	30%
D	432	36%	315	41%
E	479	42%	390	53%
F	545	49%	481	62%
G	679	59%	678	73%

Source: Knight Frank Research, DLUHC, VOA

are now looking beyond and seeking information on how the building operates. Some 70% of those surveyed in our *2023 ESG Property Investor Survey* require energy use data before acquisition. NABERS certification may also be a way to address this, as the levels earned are based on a year's worth of actual energy data. However, for occupiers, as mentioned, there is still an education into what this means in practice for their goals and energy costs. To future-proof to an even greater extent, the focus should also include how buildings operate and their energy consumption, ensuring they are utilised in the optimal way as designed.

Functional flex

The office occupiers' wish list was shown on page 12, but does it match the market supply? In some ways, yes. To get this conclusion we explored nearly 400 UK office buildings that have undergone refurbishment, including 277 with a BREEAM Refurbishment and Fit-Out certification and over 100 retrofitted without it. We were limited

to what was publicly available through marketing material, so this may exclude some softer amenities.

Several key amenities stand out as priorities across the BREEAM-certified sample. End-of-trip facilities, i.e., showers and changing rooms, lead the list, with 82% of buildings incorporating these facilities, as Figure 8 highlights. Cycle storage and facilities are also among the most common amenities, with a 75% inclusion rate, further supporting the trend towards sustainable commuting. As noted, there are specifications within BREEAM assessments that credit these facilities.

Looking at just the 25 properties with the highest Outstanding BREEAM rating, cycle storage and facilities were present in 96% of buildings and gardens, terraces, and courtyards were included in 84%.

Across our sample, Outstanding properties had, on average, 5.2 specified amenities, while Excellent, Very Good, and unrated properties averaged 4.2, 4.3, and 4.2 amenities, respectively.

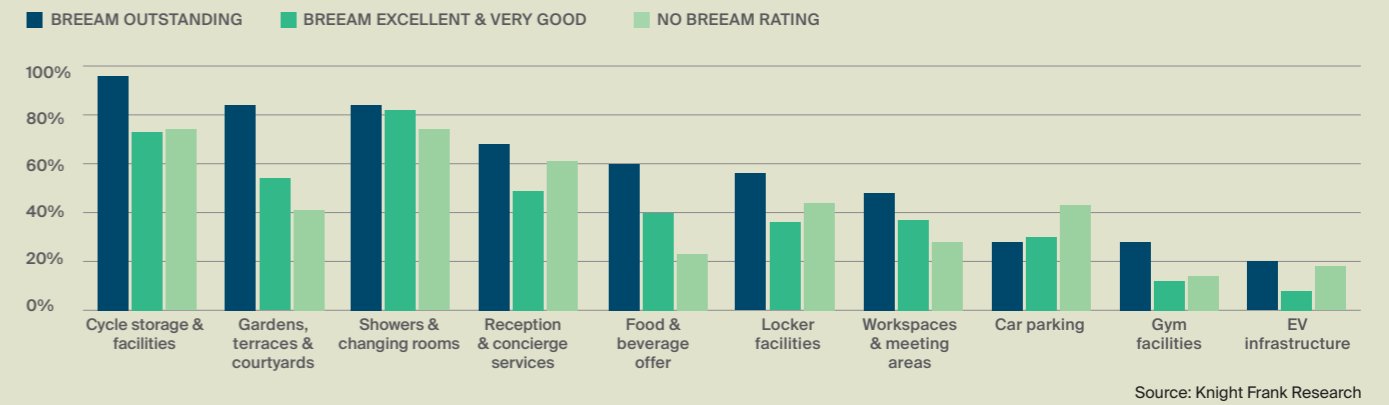
Beyond the basics, property owners are tailoring the amenity offering depending on the location. BREEAM Outstanding properties in London

average 5.5 amenities, while those outside of London averaged 4. The main differences between offices outside London and those in the city are the availability of car parking and the absence of green spaces like gardens, terraces, and courtyards.

By contrasting this data with the wish lists previously presented, the current delivery is largely matching up to demand only in the highest certified buildings – given the number and type of amenities on offer.

Bringing this all together, the amenity provision in a building should be contingent on certification strategy and the type of occupier targeted. The consideration of amenity level will form a key part of any strategy and influence the business case.

Figure 8: Amenity extras



MARKET VIEW

Big five

The five key consideration areas for any asset plan



Charles Ingram Evans

Head of Project and Building Consultancy

When undertaking a retrofitting project, several practical implications and considerations exist for weighing up amenity provision and net lettable area. Whilst these can only be assessed on an asset-by-asset basis, they fall into five areas, which each come with several factors which are critical for space utilisation and maximisation are:

1. Legislative requirements: MEES, fire safety regulations, and Part L, Part M and Part Z building standards. These include additional staircases on higher buildings, gendered self-contained toilets, positioning lift lobbies in front of the core where terraces are provided, and only a single means of escape. More extensive thermal insulation in walls is needed to comply with improved u-values required to improve EPC ratings, which will reduce internal space.

Larger substations are necessary for higher capacity to support an all-electric building.

2. Amenity provision: Some of these fit into legislative requirements, for example, in London, for business offices, there is a need to provide one cycle space per 75 or 150 sq m, depending on the location, and one shower per 10 long-stay cycle spaces. For others, considering what communal space is used for amenities such as prayer rooms, crèche, café, co-working or collaboration spaces, gym/exercise studios, conference suites, etc, means for gross to net lettable area. What amenities are needed, and how big?

3. The 'Wow Factor': The curb appeal is vital for some; when retrofitting, will enhancements to the arrival experience, including interventions like a double

height reception, a new façade, or a new entrance, broaden the appeal?

4. Economic viability: This is the most significant piece of the puzzle is the cost of works and something the research will cover in greater detail in Part 2 of this series. Not only is this linked to construction price inflation, but the floor plate efficiency can significantly influence the net-to-gross ratios of spending to income and, therefore, payback periods and viability.

5. Time frames: Planning and construction timelines are considerable with retrofitting projects. Our project experience ranges from 20 months for 50,000 sq ft or below to almost four years for more extensive projects over 300,000 sq ft. Again, the research will cover this in greater detail in Part 3 of this series.

Future-thinking

The first piece of the puzzle is forming the strategy and asking the right questions

This first part of the three part *Meeting the Commercial Property Retrofit Challenge* series, highlights that our industry requires a retrofit revolution, whether that's to meet potential minimum regulatory requirements or the evolving functional needs and increasing occupier demands.

While our report offers high-level market evidence, each portfolio and building must be evaluated case by

case. There is a requirement to assess local market demand and supply, look to the future in terms of how this may evolve with occupier requirements, expectations, and economics. It is imperative to begin conducting audits and gathering data points to understand individual assets and broader portfolios. Seeking advice at the earliest stages can assist in formulating optimal and effective strategies.

Having a clear approach and goal is critical, but viability will be the biggest question to answer: What are the benefits, and how do they weigh up to the costs? What are the other options available and how do you take a decision on whether to retrofit, reposition, repurpose or redevelop? The following parts of the series will seek to answer these fundamental questions.

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